

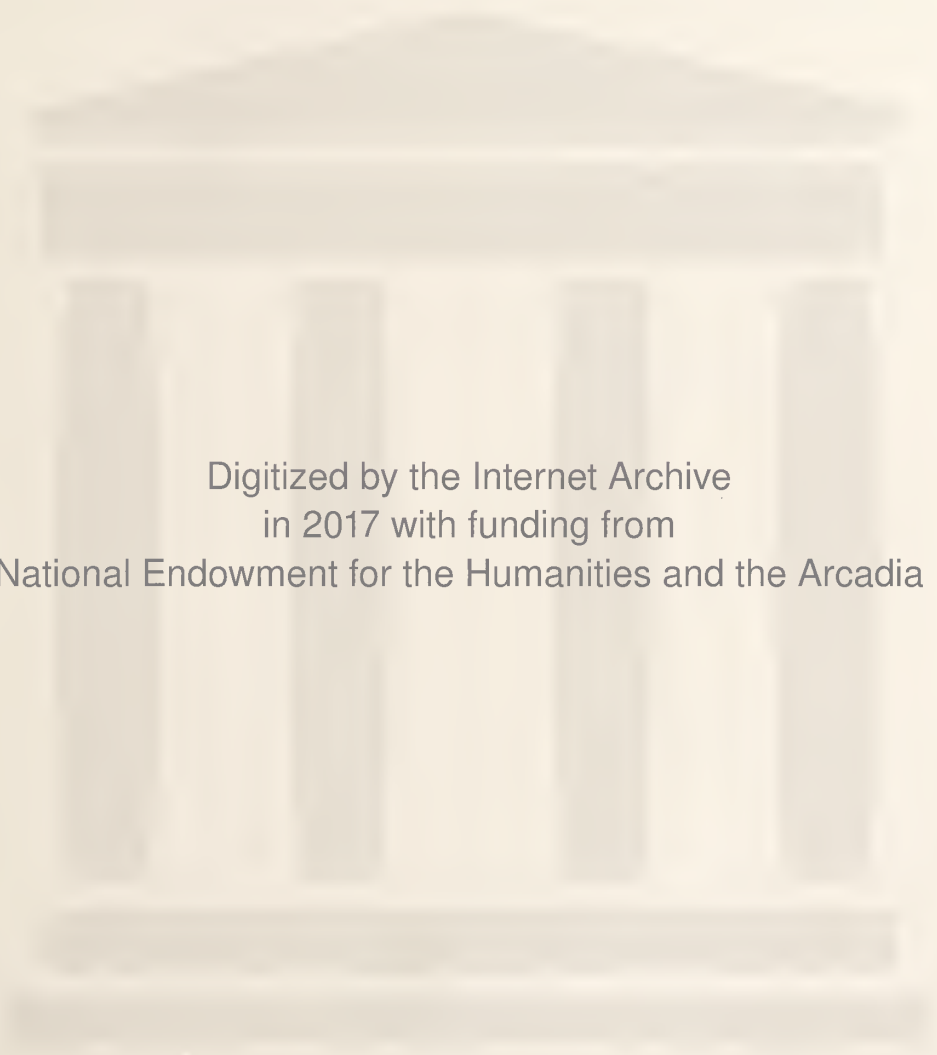


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THE JOURNAL

OF THE

Tennessee State Medical Association

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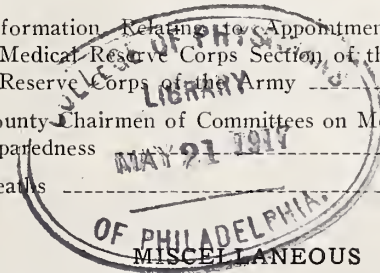
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Number 1.

NASHVILLE, TENN., MAY, 1917.

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THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, under Direction of the Trustees

OLIN WEST, M. D., Editor and Secretary

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VOLUME X.

NASHVILLE, TENN., MAY, 1917.

NUMBER 1.

TENNESSEE STATE MEDICAL ASSOCIATION.

MINUTES OF THE EIGHTY-FOURTH ANNUAL
MEETING, HELD AT NASHVILLE, APRIL
3, 4, AND 5, 1917.

APRIL 3—FIRST DAY—MORNING SESSION.

The association met in the auditorium of the Y. M. C. A., and was called to order at 10:30 A.M. by the chairman of the Committee of Arrangements, Dr. J. F. Gallagher, Nashville.

Prayer was offered by the Rev. Carey E. Morgan, Nashville.

INVOCATION BY DR. MORGAN.

Almighty God, our Father, we thank thee for the day and place and the fellowship and the motive of this hour. Thou dost bless us in so many ways this morning. We thank thee for the glory of the sunshine, for the throb of life in our own hearts, answering to the throb of life in the heart of the world. We pray that thy blessing may rest upon our brothers who have come here from all over this good state to confer together, to counsel with each other, and to consider some of the matters that are of vast importance to all people. We thank thee for their place in the commonwealth and for their precious relation to the people. The one who makes this prayer remembers with devout gratitude their relation to him and his loved ones.

We thank thee for the progress that has been made in their great profession, both in medicine and in surgery. We are grateful when we remember how thou hast given them the victory over cholera and yellow fever and certain black deaths that used to sweep the world with destruction, and we remember with gratitude how

they have already learned to win the fight against typhoid fever. We pray thee to help the people and the medical profession to win victory over tuberculosis, also the diseases that come from impurity. We thank thee, our Father, for the people who have been blessed by their coming. Thou dost know how with courage and buoyancy, day and night, under strain and stress of soul, they have fought death for our loved ones. We pray thy benedictions to rest upon every one of them. Do thou help them to have great joy in their thought and in the worth and meaning and significance of that which they do in the homes of our people. We like to rejoice in the possibility that they can help to prolong life instead of destroy it. It was right to call Jesus the "great Physician," and we rejoice with these brothers of ours in the privilege that comes to them in slowing down the quickened pulse, soothing the tumultuous heart throb of the child and of the child's mother and father whose great task it is to stand and guard the threshold with the strength of their task. Bless their loved ones at home. Bring all these brothers back to the shelter of the roof where the loved ones shelter. Give them strength as they strengthen and go about their tasks. Help us to remember that we are partners; that we are really working together for the welfare of the world. So may we have this fellowship of faith and service through Jesus Christ, our Lord, in whose holy name we make our prayer. Amen.

ADDRESS OF WELCOME ON BEHALF OF THE NASHVILLE ACADEMY OF MEDICINE AND DAVIDSON COUNTY MEDICAL SOCIETY BY DR. H. M. TIGERT, NASHVILLE.

Mr. Chairman and Members of the Tennessee State Medical Association: As a member of the Nashville Academy of Medicine and Davidson

County Medical Society, I assure you it is a great pleasure indeed for me to extend on their behalf a most cordial welcome and an affectionate greeting.

Our constitution ordains that on alternating years the State Society shall meet in this capital city of our state, and I assure you that these events constitute some of the proudest milestones in the professional careers of our local fraternity.

I know of nothing in medical life which yields such a high rate of interest, both in mind and body, as these gatherings. In gatherings such as this men are inspired to higher ideals; they are stimulated to renewed effort; and, above all, they are elevated from the ruts of obsolete methods and modes of thought to the smooth highway of scientific advancement. This is a clearing house in which men are taught to respect their opinions, but not to worship them; to shun jealousy; to eschew envy; and to follow progress. It is here we are taught to prevent the demands of life from chilling our enthusiasm for study and knowledge. It is here we learn of the wonderful value of efficiency and coöperation.

Now, gentlemen, our worthy Secretary has provided a scientific program of unusual worth and singular interest, and the Committee of Arrangements have provided such entertainment as we hope will make your stay among us pleasant.

In conclusion, let me say it is our sincere wish and sincere hope that each and every member of the association shall return home a better doctor and a happier man. I thank you. [Loud applause.]

RESPONSE TO THE ADDRESS OF WELCOME BY
DR. A. F. RICHARDS, SPARTA.

Mr. Chairman and Members of the Tennessee State Medical Association: It affords me no small degree of pleasure to appear before you this morning and respond to the hearty welcome of my friend and coworker, Dr. Tigert, at the same time feeling that, instead of a response, I should offer a welcome, because I am at home in Nashville. I am a Middle Tennessee man. This is my birthplace in medicine, and I assure you that I feel at home; but I am sufficiently remotely situated in this Middle Tennessee section to justify the appropriateness of my responding, because I am a doctor of the "sticks," as most of us are. So I want to respond to that whole-hearted, that warm welcome which Dr.

Tigert has just extended; and, on behalf of the Tennessee State Medical Association at large, I want to accept your welcome, Dr. Tigert, and distribute it to the men from the distances.

We love to come to Nashville, because we recognize Nashville as the center of learning for Tennessee. We recognize Nashville as almost, if not entirely, the center of medical learning. Nashville, Tenn., the "Athens of the South," situated as it is, has been said by some of our best speakers in the past to be the "dimple of the universe," rock-grounded and rock-bounded, drained by the great Cumberland River that sweeps on and takes the refuse away and wafts it to the great "Father of Waters" which washes our western shore, upon which is located that great metropolis, not only of Tennessee, but of the South—Memphis. [Applause.]

It makes my heart swell with emotion and a feeling almost unbounded and almost beyond my control to think of Nashville when I associate it with the names and fathers in medicine—those great men who set the pace, who made the pattern, who fought the fight, who struggled through poverty and hardship, and have brought to our understanding and appreciation the greatest profession of the earth, save that of Dr. Morgan's; and, at the same time, I should say that it is within the power and within the hands of every good doctor to administer such balm as even a minister of the gospel. When I associate these names with my earliest impression of medicine in Tennessee; when I begin to think how well I loved doctors and how I admire the profession of medicine, I am reminded of when I used to see my old country doctor pass by the field where I was plowing for my father. He looked good to me. His saddlebags flapping on the aged sorrel horse looked good to me; and when I came for that doctor, it was a pleasure for those saddlebags to joggle me on the knee, because he was going to see my mother, who was anxiously waiting for him to come. With that spirit, with that idea of how I loved the profession, it was in this city that that spirit was revived and was brightened. It served as an impetus for me to study medicine and to love this noble profession of which we are all members.

Those men who have left their example, and many of them their children, are the great Eve, Briggs, the Maddins, Cain, and other great teachers who have gone to their long homes. It

is soul-inspiring. It makes me eager to know more and to do better because of the spirit I caught from those men in this great medical center, Nashville. And so it makes me feel like accepting the invitation tendered to us on behalf of the Nashville Academy of Medicine and the Davidson County Medical Society. We are your guests, and we are sure from our past experience that we will receive at your hands that same courtesy and classy entertainment we have always been the happy recipients of in the past.

I bespeak for this meeting, with the corps of officers and the favorable prospect, one of the most successful meetings we have ever had; for it was just last year in the city of Knoxville that a real pattern was set for a genuine medical meeting for the Tennessee State Medical Association.

I thank you, Dr. Tigert, and the Nashville members for their very hearty, hearty welcome. [Loud applause.]

Dr. Gallagher, chairman of the Committee of Arrangements, announced that the Nashville Academy of Medicine would give a dinner to all members of the State Society at the Tulane Hotel at 8 P.M., Wednesday.

Dr. C. N. Cowden, Nashville, President of the association, was then introduced by Dr. Gallagher, and took charge of the meeting.

Dr. W. M. Johnson, Sparta, read a paper entitled "The Responsibility of the Medical Profession with Regard to the Prevention and Control of Cancer," which was discussed by Drs. Clack, Haase, Richards, Fancher, and, in closing, by the essayist.

Dr. J. W. Broyles moved that a telegram of sympathy be sent to Dr. E. G. Ballenger, of Atlanta, in his illness, with hopes of a speedy recovery.

The motion was seconded and carried.

Dr. J. J. Waller, Oliver Springs, read a paper entitled "The Insanities and Their Relation to the Practice of Medicine."

This paper was discussed by Drs. Rucker, Padgett, and, in closing, by the essayist.

Dr. H. L. Fancher, Chattanooga, read a paper on "Inguinal Hernia," which was discussed by Drs. Gaines, Hardison, Cowden, and the discussion closed by the essayist.

On motion of Dr. West, the association adjourned until 1:30 P.M.

FIRST DAY—AFTERNOON SESSION.

The association reassembled at 1:30 P.M. and was called to order by Vice President J. T. Moore, of Algood.

A committee, consisting of Dr. S. T. Hardison, George Williamson, and William H. Witt, was appointed to draft suitable resolutions of sympathy to Dr. W. K. Sheddan in the death of his wife.

It was moved and seconded that Dr. William Krauss, Memphis, read his paper at this time.

Carried.

Dr. William Krauss, Memphis, read a paper on "The Indifference of the Profession Toward Public-Health Laboratories," which was discussed by Drs. Gant, Hardison, Shoulders, and Newell.

Dr. R. G. Henderson, Memphis, read a paper entitled "Regional Eczema," which was discussed by Drs. Friedman, Haase, and, in closing, by the essayist.

Dr. J. H. Barnett, Chattanooga, followed with a paper entitled "Intra-Abdominal Use of Oxygen," which was discussed by Dr. Fancher and, in closing, by the essayist.

Dr. H. H. Shoulders, Nashville, read a paper on "Health Insurance," which was discussed by Drs. White, Richards, Gallagher, and discussion closed by the author of the paper.

On motion of Dr. West, Dr. Frederick R. Green, secretary of the Council on Health and Public Instruction of the American Medical Association, was granted the privileges of the floor.

Dr. William Britt Burns, Memphis, introduced at this juncture Mr. J. L. McWhorter, who addressed the association on the importance of holding a constitutional convention.

At the conclusion of Mr. McWhorter's remarks, President Cowden extended him the thanks of the association.

Dr. J. B. Haskins, Chattanooga, read a paper on "Operative Treatment for Gangrene of the Feet, with Special Reference to the Blockage of the Venous Return, with a Report of Two Cases," which was discussed by Drs. Baird, Newell, and, in closing, by the essayist.

The Secretary presented a resolution on medical preparedness and moved its adoption.

The motion was seconded by several and carried unanimously by a rising vote.

Dr. William St. John, Bristol, read a paper en-

titled "Remarks on Leukemia," which was discussed by Drs. Duncan, Witherspoon, Hardison, and, in closing, by the essayist.

Dr. S. T. Hardison, chairman, presented the following:

The Tennessee State Medical Association having learned of the death of Mrs. W. K. Sheddan, wife of one of our honored members, we, your committee appointed to draft a suitable resolution, do offer the following:

Resolved, That it is with sincere regret that we have heard of this bereavement that has come to our brother, and we extend to him our sincere sympathy in his irreparable loss. [Signed] W. H. WITT.

GEORGE T. WILLIAMSON.
S. T. HARDISON, *Chairman*.

On motion, the resolution was adopted.

Dr. George R. West, Chattanooga, read a paper on "Fecal Fistula," which was discussed by Drs. Caldwell and Cowden.

On motion, the association adjourned until 8 P.M.

FIRST DAY—EVENING SESSION.

The association met at 8 P.M., and was called to order by the Vice President, Dr. J. T. Moore.

The President, Dr. C. N. Cowden, Nashville, was introduced and delivered his presidential address, entitled "The Trend of the Times in Medicine and Surgery."

Chancellor Kirkland, of Vanderbilt University, gave a forcible and impressive talk on "Medical Preparedness."

Dr. Frederick R. Green, Chicago, secretary of the Council on Health and Public Instruction of the American Medical Association, followed with an address on "State Regulation of the Practice of Medicine as an Educational Problem."

On motion, the association adjourned until 9 A.M., Wednesday.

APRIL 4—SECOND DAY—MORNING SESSION.

The association met at 9 A.M., and was called to order by Vice President Moore.

Dr. J. O. Manier, Nashville, read a paper entitled "Nonspecific Factors in Certain Infectious Diseases," which was discussed by Drs. Jobling, Martin, Duncan, and, in closing, by the essayist.

Dr. Jere L. Crook, Jackson, followed with a paper on "Left-Sided Appendicitis." This paper was discussed by Drs. Newell, Cowden, and discussion closed by the author of the paper.

Dr. Frank A. Jones, Memphis, read a paper

entitled "Further Consideration of Hydrothorax in Its Relation to Cardiorenal Lesions," which was discussed by Drs. Witt, G. D. LeQuire, Roberts, and, in closing, by the essayist.

Dr. W. G. Sommerville, Memphis, read a paper on "Traumatic Hysteria," which was discussed by Dr. McElroy and, in closing, by the essayist.

Dr. J. S. McLester, Birmingham, Ala., read a paper on "Syphilis in Medicine."

President Cowden extended the thanks of the association to Dr. McLester for his interesting and instructive contribution.

Dr. John A. Witherspoon, Nashville, read a paper on "Gastric Ulcer and Its Differentiation," which was discussed by Drs. Lawrence, Holder, and King.

On motion, the association adjourned until 2 P.M.

SECOND DAY—AFTERNOON SESSION.

The association reassembled at 2 P.M., and was called to order by Vice President Moore.

Dr. J. B. McElroy, Memphis, read a paper on "First Corinthians, Fifteenth Chapter, Thirty-Ninth Verse:" "All flesh is not the same flesh: but there is one kind of flesh of men, another flesh of beasts, another of fishes, and another of birds."

This paper was discussed by Drs. Jones, Maxwell, Barnett, and, in closing, by the essayist.

The Secretary read the following telegram from Dr. Seale Harris:

BIRMINGHAM, ALA., April 4, 1917.

Tennessee State Medical Association in Convention Assembled, Nashville, Tenn.:

Greeting and best wishes for a most successful meeting. I know the honored President of the Southern Medical Association, your own beloved Dr. Duncan Eve, has or will extend all members of the Tennessee State Medical Association a most cordial invitation to attend our Memphis meeting in November. Let me also urge you to come. The great state of Tennessee has been honored by having one of its great men chosen President and one of its great cities chosen as the meeting place. Why shouldn't we expect great things from you?

Dr. Duncan Eve then addressed the association on the forthcoming meeting of the Southern Medical Association, to be held in Memphis, November 12, 13, 14, and 15, and extended a cordial invitation to the members to attend this meeting.

Dr. E. T. Newell, Chattanooga, read a paper

on "Blood-Vessel Anastomosis, with report of Cases and Moving Pictures."

The paper was discussed by Drs. Barnett, Black, and, in closing, by the essayist.

Dr. Willis C. Campbell, Memphis, read a paper entitled "Fractures of the Neck of the Femur," which was discussed by Drs. McCabe, Tucker, Eve, Gallagher, Holder, Tigert, and discussion closed by the essayist.

Captain Cooper, of the United States Army, addressed the association on "Medical Preparedness."

Dr. Oliver W. Hill, Knoxville, read a paper on "Management of Breast Feeding."

Dr. John M. Lee, Nashville, read a paper on "Simplified Artificial Feeding."

Dr. Owen H. Wilson, Nashville, followed with a paper on "Patent Foods."

These three papers were discussed jointly by Drs. Alexander, Miller, Moore, and discussion closed by Drs. Hill and Wilson.

Dr. W. T. Black, Memphis, read a paper on "The Surgical Treatment of Prolapse of the Remaining Structures After the Removal of the Uterus," which was discussed by Drs. Tigert, Haggard, Holder, and, in closing, by the essayist.

On motion, the association adjourned until 9 A.M., Thursday.

APRIL 5—THIRD DAY—MORNING SESSION.

The association met at 9:30 A.M., and was called to order by Vice President Moore.

Dr. T. G. Pollard, Nashville, read a paper on "Surgery of the Prostate," which was discussed by Drs. Johnson, Duncan, and, in closing, by the essayist.

Dr. William Britt Burns, Memphis, read a paper entitled "Chronic Pancreatitis—Pancreatotomy," which was not discussed.

At this juncture the Secretary presented an epitome of the proceedings of the House of Delegates and the nominations and election of officers. (For particulars, see "Minutes of the House of Delegates.")

It was moved that the report be adopted as presented.

Seconded and carried.

The President appointed Drs. Larimore, Burns, and Caldwell to escort the newly elected President, Dr. E. T. Newell, to the rostrum.

President Cowden, in introducing his successor, said: "Dr. Newell, you have been taken

from the little, obscure town of Chattanooga [laughter] and elevated to one of the highest offices in the gift of the Tennessee State Medical Association. That you will fill the position worthily, we all believe. That it is the highest position of honor that will ever come to you, is, I think, because it comes from men that know you, who know your reputation and character as a physician, and men that love you. Gentlemen, I take great pleasure in presenting your newly elected President, Dr. E. T. Newell, of Chattanooga." [Loud applause.]

Dr. Newell, in accepting the presidency, said: "Mr. President and Gentlemen: I am deeply appreciative of the honor that you have conferred upon me in electing me to the presidency of this great association. I cannot help but feel, however, that there are others among you who should have been elected in my stead. I am all the more appreciative of the honor, for I realize, as Dr. Cowden has said, it is the greatest gift at the hands of the Tennessee profession. I am also cognizant of the work that the office carries with it when I realize what Dr. Cowden has just about completed—one of the most successful, if not the most successful, meetings that the Tennessee State Medical Association has ever held.

"Looking back, over the short time of ten years that I have been in Tennessee, at the ex-Presidents during that time and the work they have done and what they have accomplished, I cannot help but feel that I am even more than incapacitated for the office after those who have served you. There is the bright and capable Ellett, of Memphis; the beloved Miller, of Knoxville; the brilliant Haggard; and many others. I cannot refrain from mentioning in this connection Tennessee's greatest medical orator, Witherspoon.

"I shall endeavor to emulate and follow the example of these men in so far as I can in the administration of the affairs of this association during the coming session, 1917-1918. I want your cooperation. I want you to know that this is your association and my association, and let us try to bring together at our next meeting as many as, if not more than, we have had at this one. I thank you." [Loud applause.]

On motion of the Secretary, the Vice Presidents were brought forward and introduced to the association.

The Secretary stated that Memphis was selected as the next place of meeting, and the date of the meeting has been changed from the first Tuesday to the second Tuesday in April.

Dr. W. S. Lawrence, Memphis, then read a paper entitled "The Roentgen Treatment of Uterine Fibromyomata and Hemorrhagic Metritis," which was discussed by Drs. King, Campbell, King, Dixon, Cowden, and discussion closed by the essayist.

Dr. W. D. Haggard, Nashville, read a paper on "Splenectomy for Banti's Disease," which was discussed by Drs. Burns, Holder, and Johnson.

At the close of the discussion Dr. Haggard exhibited a boy, thirteen years of age, with splenic anemia.

Dr. J. F. Gallagher, Nashville, read a paper entitled "Consideration of Backward Displacements of the Uterus," which was discussed by Dr. Burns.

Dr. H. M. Tigert presented the following preambles and resolutions:

Whereas, House Bill No. 1613, which has just been introduced in the House of Representatives, provides for the repeal of the vital-statistics law; and

Whereas, this law is one of the most important laws on the statute books of Tennessee—a law which places Tennessee in line with other progressive states in the matter of health and social legislation; and

Whereas, this law is being effectively administered in Tennessee; therefore be it

Resolved, That this association reiterates its indorsement of the law, and that we protest against any effort looking to its repeal or to the impairment of its efficient administration. Be it further

Resolved, That a copy of these resolutions be furnished the Speakers of the House and Senate and that another copy be furnished the press.

Dr. Tigert moved the adoption of these resolutions.

Seconded and unanimously carried.

Dr. William Litterer, Nashville, read a paper entitled "A New Species of Streptothrix in a Case of Rat-Bite Fever," which was discussed by Drs. Witherspoon and Runyon.

On motion, the association adjourned until 1:30 P.M.

THIRD DAY—AFTERNOON SESSION.

The association reassembled at 2 P.M., and was called to order by President E. T. Newell.

Dr. E. A. Sayers, Nashville, read a paper en-

titled "Treatment of Fractures," which was discussed by Drs. Eve, Billington, Johnson, and discussion closed by the author of the paper.

Dr. J. S. Campbell, Gordonsville, read a paper on "Pneumonia," which was discussed by Drs. Eggstein, Witherspoon, LeQuire, Waterson, and, in closing, by the essayist.

Dr. J. M. King, Nashville, read a paper entitled "Practical Electro-Therapeutics." This paper was discussed by Drs. Billington, Simons, and discussion closed by the essayist.

Dr. Margaret O. Davis, Nashville, followed with a paper on "Morphinism," which was discussed by Drs. Sanford and Cullum.

Dr. Charles A. Robertson, Ridgetop, read a paper on "Some Facts About Tuberculosis," which was discussed by Dr. Aycock and, in closing, by the essayist.

It was moved that a hearty vote of thanks be extended to the Nashville Academy of Medicine for the entertainment of the members and guests during the meeting.

Seconded and unanimously carried.

On motion, the association adjourned to meet in Memphis the second Tuesday in April, 1918.

OLIN WEST, M.D.,

Secretary.

MINUTES OF SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY.

The Section on Ophthalmology and Otolaryngology was called to order at 8 o'clock P.M., Tuesday, April 3, 1917, with the President, Dr. Charles Huff Davis, of Knoxville, in the chair.

The presidential address was read by Dr. Davis.

Dr. E. C. Ellett, Memphis, read a paper on "Glaucoma," which was discussed by Drs. Savage, Simpson, Christenberry, Wood, and, in closing, by the essayist.

Upon motion of Secretary Roberts, the Chair appointed a committee, composed of Drs. Roberts, Cullom, and Savage, to take up with the House of Delegates matters relative to expenses incurred in making necessary arrangements for the section, and to consider with them the matter of arranging the next yearly program, so that there will be no conflict between the programs of the general session and the section.

It was announced by Dr. J. P. Crawford that,

in compliance with the desire of the Secretary and others, he would have present at the meeting on Wednesday a number of patients from the blind school in order that members might have an opportunity to see them and to judge for themselves the results obtained from treatment of trachoma as set forth in his paper read before the section, the attendance of the patients having been made possible through the kindness of Superintendent Armstrong.

Dr. Cayce invited any present who cared to do so to attend a clinic to be held at the Woman's Hospital at 8 o'clock Wednesday morning, at which a simple mastoid and a Sluter operation would be done, the latter to be demonstrated by Dr. Louis Levy, of Memphis.

The section then adjourned until 9 o'clock Wednesday morning.

WEDNESDAY, APRIL 4.

The section was called to order by President Davis at 9 A.M.

A paper on "Trachoma, with Special Reference to the Treatment with the Bulgarian Bacillus," was read by Dr. James P. Crawford, of Nashville. A number of patients from the Tennessee School for the Blind who had received the treatment described were presented for examination by members.

Dr. C. J. Broyles, Johnson City, presented a paper entitled "Inflammations of the Conjunctiva Resembling Trachoma," which, with the paper of Dr. Crawford, was discussed by Drs. Dulaney, Simpson, Ellett, Willard Steele, Moore, Savage, N. C. Steele, Ellett, and, in closing, by the essayists, Drs. Crawford and Broyles.

A paper on "Angioma of the Larynx" was read by Dr. Richmond McKinney, Memphis, and discussed by Drs. Louis Levy, Simpson, and, in closing, by the essayist.

Dr. J. T. Herron, Jackson, presented a paper on "Gonorrhœal Ophthalmia," which was discussed by Drs. Savage, Levy, Broyles, Christenberry, Crawford, N. C. Steele, Moore, Willard, Steele, and, in closing, by the essayist.

The section adjourned until 2 P.M.

WEDNESDAY, APRIL 4, 2 P.M.

The section met at 2 P.M., pursuant to adjournment, and was called to order by President Davis.

The Chair appointed a Nominating Committee for the purpose of presenting names for consideration by the section in the selection of officers for the ensuing year: Drs. O. Dulaney, Herschell Ezell, and J. McC. Hogshead.

Dr. E. B. Cayce, Nashville, exhibited a specimen of a head in section and demonstrated the otographical anatomy thereon.

On motion, duly seconded, the thanks of the section were tendered Dr. Cayce for his unusual and valuable demonstration.

Dr. J. McC. Hogshead, Chattanooga, read a paper on "Etiology of the Catarrhal and Suppurative Inflammations of the Nasal Accessory Sinuses," which was followed by a paper by Dr. T. Hilliard Wood, Nashville, on "Symptoms and Diagnosis of the Catarrhal and Suppurative Inflammations of the Nasal Accessory Sinuses," and a paper by Dr. Herschell Ezell, Nashville, on "Treatment and Prognosis of the Catarrhal and Suppurative Inflammations of the Nasal Accessory Sinuses." These papers were discussed by Drs. Cayce, Simpson, McKinney, Levy, Crawford, Blue, _____, _____, and, in closing, by the essayists, Drs. Hogshead, Wood, and Ezell.

It was moved by Dr. W. S. Dotson, Lebanon, that the report of the Nominating Committee be heard.

Carried.

The report of the Nominating Committee was then read, Dr. Richmond McKinney, Memphis, having been nominated for President. After his election by a *viva voce* vote, Dr. McKinney was called to the chair and responded to calls for "a speech" with a few very happily chosen remarks, in which he expressed his appreciation of the honor conferred upon him, and extended a most cordial invitation for all members of the section to attend the next annual meeting at Memphis. He also made some suggestions for the improvement of future programs which were well received.

Dr. T. Hilliard Wood, Nashville, was nominated by the committee for Vice President, and was duly elected.

Dr. W. W. Potter, Knoxville, was elected Secretary, having been nominated by the Nominating Committee.

The regular program was then proceeded with by the reading of a paper by Dr. Thomas P. Miller, Knoxville, entitled "A New Theory on

Hay Fever." This paper was discussed by Drs. McKinney, Christenberry, N. C. Steele, Savage, Simpson, Crawford, —————, and, in closing, by the essayist.

The next paper on the program, "A Discussion of the Simple and Radical Mastoid Operations," was read by Dr. H. E. Christenberry, Knoxville, and was discussed by Drs. —————, —————, Blue, Wood, Levy, Crawford, McKinney, Crawford, and, in closing, by the essayist.

Dr. O. Dulaney, Dyersburg, presented a paper on "Ophthalmic Conditions Secondary to Infection in Other Parts of the Body," which was discussed by Drs. —————, Blue, —————, Wood, and, in closing, by the essayist.

A paper on "The Buccal Route for Operative Procedure on the Anterior Part of the Floor of the Nose" was read by Dr. W. Likely Simpson, Memphis. Because of the lateness of the hour, Dr. Simpson's paper was not discussed.

The Secretary announced the banquet at the Tulane Hotel at 8 o'clock, to which all present were invited.

The section adjourned to meet at Memphis in April, 1918.

RICHMOND MCKINNEY,

W. W. POTTER,

President.

Secretary.

MINUTES OF HOUSE OF DELEGATES.

1:30 P.M., APRIL 4, 1917, AT Y. M. C. A.,
NASHVILLE, TENN.

DR. C. N. COWDEN IN THE CHAIR.

Chairman: The House will now come to order, and we will hear the reading of the minutes of the last meeting.

Secretary: I have a list of delegates, so far as they have been made known to me; but some of these are not here, and, in the event the delegate from a county is not in attendance on the meeting, any member of the society may represent his county.

The minutes of the last meeting, Mr. Chairman, I have here. They were published, as you all remember, in the May Journal, and take up the biggest part of some sixty pages of printed matter. I don't suppose the House of Delegates wants to waste time to hear them read.

Dr. Tigert: I move that we dispense with the

reading of the minutes, unless there is some special point that the Secretary wishes to read: if so, we will have that verbally.

Motion seconded and carried.

Secretary: Not in the minutes, but I want to call attention to the fact that we have four counties which have been organized—Bradley, Hawkins, Cocke, and Coffee—since the last meeting; and charters for these societies will have to be issued by the House of Delegates. I would like to ask that the House of Delegates authorize me to issue charters for these new societies.

Moved and seconded that charters be issued to Bradley, Hawkins, Cocke, and Coffee Counties.

Carried.

Secretary: That will make it possible, Mr. Chairman, for delegates from these societies to be seated.

A Delegate: It seems to me that we should have a roll call.

Secretary: It would do no good to call the roll. A great many of the men are not here, and they are represented by alternates and chance attendants on the meeting; but I am going to pass a book around directly and have each delegate to enter his name on that book. That has been the custom heretofore. The delegates are all designated by blue badges. Dr. Allen is representing his county, since no one else is here.

Dr. Allen: They said they didn't elect any special delegate because three, besides myself, were to be here, and then it could be decided.

Chairman: The next order of business is the selection of the Nominating Committee.

Secretary: Mr. Chairman, the practice has been to take a recess for five minutes and allow the men from each section to get together and select the Nominating Committee.

The meeting then adjourned for five minutes so that each section might get together and select its three men.

Chairman: We will now hear the report from the chairman of East Tennessee.

Dr. C. J. Broyles: The East Tennessee delegation beg leave to submit the names of the following gentlemen: Dr. Vaught, of Johnson; Dr. Potter, of Knox; Dr. Larimore, of Hamilton.

Chairman: We will hear from Middle Tennessee.

Dr. Allen: Dr. Woodson, from Gallatin; Dr. White, from Franklin; Dr. McCabe, of Nashville.

Chairman: West Tennessee.

Dr. Biggs: Dr. W. B. Burns, Shelby; Dr. J. W. Sanford, Lauderdale; Dr. O. W. DuLaney, Dyer.

Chairman: I call upon the Secretary here to read the duties as contained in the By-Laws.

Secretary: (Reads from By-Laws.)

Mr. Chairman, the officers to be elected are President, three Vice Presidents (one from each Grand Division of the state), five Councilors, a Delegate and an Alternate Delegate to the American Medical Society.

A Delegate: How many delegates?

Secretary: One delegate and one alternate to the American Medical Society.

Dr. Tigert: Can he come from any division of the state?

Secretary: Yes, sir, come from wherever you want to select him.

Chairman: Does that say when the committee shall report?

Secretary: Yes—after reading of the minutes on the morning of the last day of the session.

Chairman: All right; get busy accordingly. Next is the report of the Secretary.

Secretary: (Reads report.)

(This report was printed in the April Journal.)

Chairman: You have heard the report of the Secretary. What shall we do with it?

Moved and seconded that the Secretary's report be adopted.

Secretary: I neglected to say that I have here this financial statement, and I think it advisable to have this report referred to the Auditing Committee, in conjunction with the report of the Treasurer, which will be the financial statement of the association.

Chairman: Any discussion at all of this report? If not, all in favor of its adoption—did you want to say something?

Dr. Broyles: I just wanted to commend it for its thoroughness and being such a splendid report. I think that is the best Secretary's report I ever heard, and I especially want to congratulate my friend, West, and this society especially, on the report as read.

Report adopted.

Dr. Sanford: I make a motion that the Chair appoint an Auditing Committee of three to check up the Secretary and Treasurer.

Motion seconded and carried.

Chairman: That includes the Treasurer and

Secretary also. I will report the committee a little later. We will now have the report of the Treasurer.

Dr. Gallagher: There is just a little discrepancy on account of the deposit and figuring of interest down at the bank; and if you will be kind enough to defer that, I will be very glad.

Secretary: Dr. Gallagher has his report here ready to present; but the bank has evidently gotten our account mixed with some other account, and is holding out, ostensibly, a check of ours for \$10, when there is no such thing in existence. I hope that the House of Delegates will bear with Dr. Gallagher a little and allow him to put off the reading of the report until he gets that straightened at the bank.

Chairman: We will have the Treasurer's report a little later.

A Delegate: I make a motion also that that committee check up the Medical Defense Fund also.

Chairman: It is moved and seconded that in the business of that committee be included the checking up of the Medical Defense Fund also.

Motion carried.

Dr. Gallagher: That comes as a matter of course. It is for all the finances of the society, and we would be very glad to have the committee go down to the office and go over every item. It is all itemized—all the checks, all the receipts. A part of this report is a duplicate of the Secretary's report, and both can be done at the same time. Whether we get that \$10 straightened out or not, I think the committee can go ahead; and if they want \$10, they can have mine, so I will just turn this report over.

Chairman: We will now have the report of the Committee of Public Policy and Legislation. The chairman of that committee is Dr. Holland M. Tigert.

Dr. Tigert: Mr. Chairman and Members of the House of Delegates: As chairman of your Legislative Committee, I am very glad to report that this year we had very little work to perform. There has been some legislation enacted, but not through the activities of this committee. The Shelby County Society, I think it was, sent a bill up, known as the "anti-fee-splitting bill," which has successfully passed the Legislature, and I believe now is the law; isn't it, Dr. Allen?

Dr. Allen: It just remains now for the Governor's signature to be added.

Dr. Tigert: That bill, in my opinion, is one of the most salutary measures that could have been passed. It makes the splitting of fees a felony—the bill is drastic in its provisions—and I believe for the second offense the license is revoked. I believe it also provides for imprisonment in the county jail or penitentiary, or residence in some other place equally undesirable.

A Delegate: That applies to Shelby County, Doctor?

Dr. Tigert: That applies to the whole state of Tennessee. The only point is that some of the members from Shelby County were the ones that forwarded the bill. The Legislative Committee did appear before the Sanitary Committee of the Legislature and advocate the bill and indorse it. There are some other bills that have been brought up, but, I think, more or less of minor importance; and, following out the instructions of this body given at Knoxville, we have allowed things to stand as near as possible *in status quo*. I thank you, gentlemen.

Chairman: Any discussion of the report?

Dr. Allen: I will say just to this House of Delegates that most of the work done by that committee was done before the committees in the Legislature. He didn't seem to report that very much, but everything they didn't want done they got before these various committees, and were successful, and it never reached the Capitol; so we had a great deal of work he didn't really mention. I remember one thing especially, and that was the question of physicians' using opiates, in a bill that came before the committee. The bill provided, as I remember, that health officers should dish out this opium to the various doctors throughout the country, and that we would have to get a permission from them before it could be used; and it seems that in a quiet way the medical profession of Nashville took that in hand and settled that matter before the committee, and that never reached the Capitol. I will say this for Dr. Tigert and his friends: That they have been rather active before the committees and have taken care of the association admirably. I have to go, gentlemen, for the present. I will hope to see you again.

Chairman: On the Auditing Committee I will appoint Dr. J. M. Clack as chairman, Dr. Matt Murfree, and Dr. W. T. Black.

The next committee to report will be the Committee on Scientific Work.

Secretary: As chairman of the Committee on Scientific Work, I have to report that the results of our labors are before you in the program for this meeting. We, in some ways, are rather proud of this program, and in other ways we are not singing any joyful song; but we have tried hard to get a program that would cover a wide range of subjects, and have made a special effort, Mr. Chairman and gentlemen, to secure papers from members who have not been in the habit of reading papers before this association. I think a careful perusal of this program will show that we have been successful in that, at any rate. I would like to say that, having had to do most of the detail work of the committee, I have had cordial coöperation and suggestions and active help from the other members of the committee.

One of our regrets is that Dr. E. G. Ballinger, who was to have been with us and was to have shown his remarkably interesting and instructive moving pictures to-night, has been operated on in an Atlanta hospital, and will not be here to take his part in the program. Beyond this, Mr. Chairman, I have nothing to report.

Chairman: I skipped one of the committees—the Committee on Memoirs. Dr. McSwain is chairman. Is Dr. McSwain or any member of the committee present? Dr. Dulaney?

Dr. Dulaney: I wish you would please give us further time to make the report.

Chairman: We will pass that, then, until tomorrow. The next is on Medical Defense. Dr. S. R. Miller, of Knoxville.

Dr. S. R. Miller: I wish to say that Dr. Jere Crook is not present and has not had opportunity to sign this report. I will offer it as it is, and hope Dr. Crook will approve of it.

REPORT OF COMMITTEE ON MEDICAL DEFENSE.

April 2, 1917.

Mr. President and Members of the House of Delegates:

Your Committee on Medical Defense begs to submit this, their third report of this department of the association's work, for the year 1916.

We beg to report that 695 members paid Medical Defense fee in the year 1916. In the calendar year 1915, 680 members paid their fee. In the first three months of this year 726 members have paid; and since the last day of March, other payments have been received, but are not incorporated in this report. The detail figures are set forth in "Exhibit A," herewith attached.

In the year 1916, nine suits were referred to the Committee for Medical Defense. Several other suits were brought to the committee's attention, but did not prove to be malpractice suits, or were referred by members who had not paid the Medical Defense fee, and; therefore, were not entitled to the protection offered by the State Association, and your committee declined to defend them.

Of the nine suits filed, three are in Shelby County, two in Davidson County, one in Madison County, two in Knox County, and one in Hamblen County. The suit in Madison County was thrown out of court, for the reason that no lawyer in the county would prosecute the case. One suit in Knox County, which was a joint suit, was dropped by the plaintiff without trial or compromise. The other seven suits are at issue, and our counsel are in charge of them and will be ready for trial when the cases are called. We believe that there is no cause for a judgment in either of these cases.

Thus far in 1917 two suits have been brought—one in Davidson County and one in Scott County. Both cases are receiving proper attention, and I think it probable that one suit will be dropped without any trial.

A list of the receipts and expenditures will be furnished you by the treasurer of the committee. You will see from the detailed receipts from the counties that 680 members paid in 1915, 604 of them on or before April 10; 695 paid their fees in 1916, 610 before April 1; and this year 726 have paid thus far. So you see the members are paying more promptly, and a greater number are taking advantage of this feature of our association's work.

The marked gain this year is due to the increased activities of the officers of some of the county societies, particularly Shelby County. There is, however, a gain in almost every county.

Your committee does not recommend any change in our plans, but wishes to urge the local officers of the society to keep this matter before our members.

We believe that the work of our association has served to arrest the increased rates charged by insurance companies for protection of physicians, and that it is deterring the best element of the legal profession in each community from bringing these suits.

We hope that all of our members will in a quiet, but effective, way let it be known to their friends of the legal profession that we consider malpractice suits, when without just cause, as being closely related to professional blackmail, and that we believe the medical profession should be at least as immune to malpractice as the legal profession.

The law is more fixed in its bearings and should be more clearly seen and a suit more accurately determined in advance, and yet one side loses in practically all cases; and why should physicians be expected to win in every case?

The moral influence of our individual members has been of assistance to the committee and of great value to every member of the medical profession.

Respectfully submitted,
S. R. MILLER.
H. M. TIGERT.
JERE L. CROOK.

"EXHIBIT A."

LIST OF COUNTIES, MEMBERSHIP, NUMBER PAYING FOR MEDICAL DEFENSE.

County	1915	1916	1917
Anderson	13	11	10
Bedford	15	15	15
Blount	2	1	2
Bradley	0	0	3
Campbell	2	1	3
Carroll	19	10	6
Chester	0	0	0
Cocke	0	0	0
Coffee	0	4	7
Crockett	0	0	0
Cumberland	5	6	3
Davidson	129	136	112
Dickson	2	3	4
Dyer	16	23	20
Fayette	1	2	2
Franklin	5	8	0
Gibson	20	22	21
Giles	19	21	9
Greene	2	3	5
Grundy	8	8	5
Hamblen	9	15	17
Hamilton	17	20	16
Hardeman	1	0	0
Haywood	9	4	4
Henderson	4	3	10
Henry	1	3	3
Hickman	1	0	5
Jackson	12	12	8
Jefferson	16	16	10
Knox	61	68	69
Lake	1	3	2
Lauderdale	1	2	26
Lincoln	14	14	10
Loudon	1	2	1
McMinn	1	0	0
Macon	0	4	2
McNairy	5	13	9
Madison	29	29	27
Marshall	16	13	8
Maury	1	2	2
Monroe	10	11	12
Montgomery	6	9	10
Obion	7	4	1
Overton	8	0	5
Polk	0	0	0
Putnam	18	13	7
Rhea	6	9	1
Roane	10	7	6
Robertson	7	11	7
Rutherford	0	5	0
Scott	0	9	8
Sevier	0	0	0
Shelby	67	33	134
Smith	0	0	0
Stewart	1	0	0
Sullivan, Carter, and Johnson	5	2	3
Sumner	13	9	8
Tipton	11	20	17
Unicoi	0	0	5
Warren	4	2	2
Washington	13	16	15
Weakley	11	13	6
White	14	12	11
Williamson	7	7	7
Wilson	4	5	5
	680	694	726

STATEMENT OF DR. JERE L. CROOK, TREASURER COMMITTEE ON MEDICAL DEFENSE, FOR YEAR ENDING APRIL 2, 1917.

Receipts.

Balance on hand April 1, 1916-----	\$ 873 26
Receipts -----	673 00
Total -----	\$1,546 26

Disbursements.

Dr. Willard Steele -----	\$ 1 00
Dr. S. R. Miller -----	30 00
Cates & Price (two checks)-----	300 00
Dr. S. R. Miller -----	34 06
Balance cash on hand April 2, 1917-----	1,181 20
Total -----	\$1,546 26

Chairman: You have heard the reading of this very interesting report. I believe it ought to be thoroughly discussed before its adoption. I will await the discussion if any one wants to ask anything about it.

Dr. J. W. Sanford: I am Secretary of the Lauderdale County Medical Society, and last year I and one other member paid the defense dues. This year twenty-seven members have paid out of thirty. If every secretary of each county of the state would insist on the doctor paying that one more dollar and take a little time to explain to him where that dollar is going and that it is not going in a rat hole, then many more would pay it. It is a very small amount. Our society, outside of this and before we ever had this in the state, in 1908 adopted a black list in order to collect our fees. We banded together at that time to protect each other, and we have never had a malpractice suit in that county. Gentlemen, I am willing to help the doctors in Memphis, Nashville, Chattanooga, and Knoxville to pay for protection against their suits. Furthermore, I am willing to get all the doctors in my county to pay for them. And if each County Secretary will go after the men, we can collect the dues. As our Secretary says, if we need more money, if it is within the Constitution, I don't see why we can't raise the state dues and get up some money. That is what we have always done. We have money in our county treasury, we are not bankrupt, and I am not riding to Nashville on our county funds; I am coming up here on my own funds. I don't see why we can't run a society. If we will stand together, we can run it.

Dr. H. P. Larimore, Chattanooga: This is an item of small amount, but it seems that we should acknowledge receipt of the dollar sent to the doc-

tor that pays. Of course the dollar comes from the County Secretary. If nothing more than just a postal card, I believe it would give them a feeling of more satisfaction. It would be such a little expense for Dr. Miller to send back to each doctor who has paid the dollar some acknowledgment of it. When the County Secretary collects that, he is careful to explain that you won't get any receipt for this, "but I will promise you I will send that right away to Dr. Miller." It seems that the committee ought to stand that little expense, if it is nothing more than a postal card.

Secretary: I will state that on every membership card for 1917 where Medical Defense fees are sent to the Secretary you will find marked on it: "Medical Defense."

Dr. Larimore: That is, where they go to you, Dr. West.

Secretary: Yes, that is all I can do.

Dr. Burns, Memphis: I just want to say a few words of encouragement to the membership, because I think if they will do like we have been doing down in Shelby they will be able to raise more funds for the Medical Defense. Early in January, after I was elected President of the society, I wrote to Dr. Miller and asked for some "dope" on Medical Defense. I didn't know anything about it, but told them I was going to make a special effort to increase that. Dr. Miller wrote me rather a lengthy letter and quite explanatory; and I read that to my society, and I enlarged upon it and urged everything that he asked for; and I called attention to the fact that if we didn't pay medical defense, and pay it early, we would not be protected—for instance, if we wait until the first of April to pay, we are not protected up to the first of April; and I have been urging them to pay early.

I call attention to the fact that we have also, in Shelby County, sent the \$50 that we subscribed last year for the Roane County expense; and I think a great deal of the enthusiasm that we have been able to arouse down there has been due to the letters that I have been reading to them from the "apostle of sunshine" here, Dr. Olin West. He writes me letters every once in a while and tells me what a good lot of fellows they are down there, and I read them to them, and they believe it. So this year we have brought about thirty members up here—the largest delegation we have ever been able to get here. If

the stamps hold out and his good right hand holds out, and if he will just continue that "jolly" that he puts over, it will help us all the way through the state.

Dr. LaRue: I understand from Dr. Miller that there are seven suits now being defended by this defense fund. I would like to know something about what it costs to pay the lawyer—how much it costs. The reason I ask is, we have just been through a suit for malpractice in our county. The doctor wasn't under the protection, and I know something about what it cost him.

Dr. Miller: We have had no experience as yet going through a trial. I understand that there is a case to be tried here in two or three days. We have general counsel whom we pay \$300 a year. They defend the cases in Knox County, and they employ attorneys in the other counties. That expense would be determined by the length of the suit, amount involved, etc. We try to give them attorneys that are good and capable. We don't want the cheapest thing there is; but we want a good and capable attorney, and then we want to pay them whatever it is worth. Of course we don't expect to pay any fancy prices.

There is one suit that we were ready for trial in; but at the last hour the defendant was called to Virginia to the bedside of his dying mother, so that case was not tried. It is ready for trial now. Nearly all of these cases have been brought on pauper's oath, and nearly all of them have attorneys of very ordinary ability—not in good standing in the community; and we have had no experience as yet with what a case costs us to fight it through. The two cases I reported here have been dropped, for reasons, without suit, and the case we had last year was compromised by the druggist's paying the compromise sum. It was brought jointly against the doctor and the druggist; and as the druggist paid the compromise, we had nothing to pay but the retainer fee to the attorney whom we had employed to get ready to try the case.

The insurance companies were advancing their rate from \$10 to \$15, and then from \$15 to \$25, and were talking about advancing their fees to \$35 for defending physicians—that is, for a year's policy. Now we have held it at \$25, and a good many of them have dropped down and gotten a policy which they claim is a little different some way or other—they have to hold their ground—for \$15. I have had several proposi-

tions from different insurance companies that if we would comply with certain things they would furnish all of our members policies for \$15. So, you see, we have a saving of at least \$10 on the insurance policy for those who carry them. We do not advise that, because we think the members who are protected by our medical defense fee are members who will come clear on any kind of trial brought against them, and for that reason we do not think this insurance policy is essential at all. We are saving you practically, if you choose to carry that, and effecting a real saving for other physicians of the state of at least \$10 on every policy.

Dr. Ellett: Is this fund a separate fund for medical defense, carried from year to year? For instance, what you had left from 1916—does that remain in this fund, unless it is expended, to accumulate, so that we shall have a larger fund on hand from time to time as time goes by?

Dr. Miller: Yes, sir.

Dr. LaRue: I don't like to be contentious about it, but I do want to understand it. What I want to know is this: You say that attorney you have employed is employed by Knox County, as I understand you; the attorney is for Knox County—only that he is paid \$300, whether he has a suit or not.

Secretary: Shields & Cates, of Knoxville, one of the most prominent law firms in the state, are employed as counselors of the association. They are paid a retainer fee of \$300 a year. They agree to defend any suit brought in their own county, and they designate counsel in any other county. They really just give their services in Knox County for their retainer's fee, which applies to the management of all suits in the state.

Dr. LaRue: I might as well understand this, and I don't see what good it is to those outside of Knox County. I would rather pick my own attorney.

Dr. McCabe: I think that is one of the most important things before this organization. When this first came up, there seemed to be a sort of fight between the city physicians and country physicians. In other words, the country physicians thought that by the contribution of the dollar, more suits being filed in the city, naturally the burden would be upon the men in the country. That is not true. Most of the physicians of the city—I am sure all the surgeons in the city of Nashville and every other city in the state

of Tennessee—have insurance in some of those companies which Dr. Miller has spoken of. Of course we simply carry that, but we carry this extra insurance in the state organization—I, for one—simply to help the other men. I don't need it. I already pay \$25 a year for protection; but I am willing to contribute that dollar, and more if necessary, to protect the other men in this organization. Dr. LaRue does not seem to understand what a general counsel's function is. In other words, a general counsel is a consultant. He advises. He looks after the lawsuit, and he merely has men in the counties where the lawsuit is filed to do the work. Of course no general counsel of the standing of Shields & Cates could afford to travel all over this state for \$300 a year; but their advice, in my judgment, is worth probably ten times that much. I don't see how in the world they could ever get men of the ability of these men to accept a position of this character for \$300 a year. That is one of the mysteries of this whole affair to me. They are, of course, some of the best lawyers in this state. They have agreed to defend Knox County, too. Very well, I have got no grievance against Knox County because Messrs. Shields & Cates desire to defend them for the same \$300 that they look after the general suits of this organization. If these gentlemen will join in this coöperative insurance and build it up, I am sure that in a few years we will have a sufficient fund to really be of service. It may be that in ten or fifteen years by that single dollar we could not only contribute to the attorneys, but could also pay damages in any suit. I certainly believe it is one of the most important functions of this society. After the scientific part of it, certainly the coöperative insurance feature is the most important.

I believe that every member should join. I believe that every member should contribute his dollar. For instance, say he belongs to it for twenty years. Just think—he has only paid \$20! Why, he could not get consultation from a good lawyer for \$20 hardly. If somebody threatened to sue him, if he went to an attorney's office and asked him his advice, he would charge him at least \$20. And in fifty years, which is a lifetime, the \$50 he has expended for his entire life is the cheapest thing I know of. I don't know anything in the world cheaper than this insurance at \$1 a year. I don't see how anybody could object to it.

Dr. Savage: As one who speaks from personal experience, when a suit is filed against him, he can sleep better if he has the statements of his associates behind him. I have been there. There is no other feature, save the scientific feature, of this association which is comparable to this insurance measure; and every member of this association should be protected to the extent of that dollar. There is no man—whether in the mountains, hills, hollows, or where—that is not liable to be attacked by some shyster lawyer with a threatened suit. Many years ago I received a letter in my mail one morning threatening to bring suit for something that did not amount to a snap. He wanted a compromise. I wrote back a very short letter. It must have appeared to the lawyer that I probably was a little wealthy. I said: "Plenty of money for defense, and not a copper for compromise." And I never heard from that any more. But, as every one of you know, within the past year I have been unfortunate enough to have a suit filed against me. Well, I am protected by the moral influence of this great state association, and also protected in the direction of helping in the defense, but not as to any indemnity. The man who stops with the \$1 insurance that he gets here is against his own interest. Every surgeon and every physician ought to carry insurance—not only for defense, but for indemnity. So I have been sleeping easy as to the status of my suit. I want to say it is a year old now, and no declaration has been filed. What will come of it I do not know. But I wanted to speak from a standpoint of personal experience in the matter to you of the comfortable feeling that a fellow has—a feeling that cannot be bought for a good many dollars after the trouble comes on him; but if he already has behind him the moral influence of the great state association and it has cost him only \$1, why, he is a very happy fellow. Go back home, boys, whether from the villages or cities or the country, wherever you may be from, and tell your associates that they could not invest a dollar to greater amount of satisfaction on their part than to invest it in this insurance feature. [Applause.]

Dr. G. D. LeQuire: As the Doctor suggests, he does not understand that his lawyer fee is paid, because he is outside of Knox County, is the way I understand him. I think the way he understands the matter is that the Knox County

firm of lawyers is employed for \$300 a year, and that they defend the physicians of Knox County and that they won't go to any other county; but they suggest lawyers outside of Knox County, and he is supposed to pay them.

If I understand this, the society pays this lawyer outside of this county; but this firm in Knoxville suggests who he should get, and the society pays for it. He can also employ any other lawyers that he might please and pay them all he pleases to pay them, but the society furnishes a man to defend him.

So far as the medical defense is concerned, my honest conviction is, this ought to be put in the Constitution: that each member of the association should be compelled to pay his medical defense fee; but I am not pushing that upon any member that doesn't want to. If the society does not approve of that, it is all right.

I live out in the "sticks." I have never had any suggestion of a malpractice suit being brought against me; but I don't know when I might have one, and it is worth the \$1 a year to feel that the State Medical Society is backing you up, even if you never have a lawsuit. You have the satisfaction that you have the moral support of the society behind you.

Dr. LaRue: I don't like to annoy the society, but it seems that there doesn't anybody understand what I am talking about. It is a very strange thing. I want you all to understand I am not opposed to using it, and the secretary of my society will bear me out. I have contended all the time that we ought to pay, not \$1, but \$5, and get a fund that all of us could be defended for if we needed it. I have claimed all the time that the \$1 is too small, and I still claim it, and I have the \$5 in my pocket. I will pay it to-day, so that not merely the fellow that lives in Knoxville, but all of us, may be looked after. Now, suppose that fellow living in Knoxville telephones me: "LaRue, you get such and such a fellow." I don't know that fellow over there in Knoxville; I don't know a thing about him; but I know about my lawyer. We had a suit down there last summer, but didn't get any help, because the defendant hadn't paid his \$1. The only question with me is that if you have seven suits I don't believe you have money to defend them. You can't hire a good lawyer for \$300. I was unfortunate enough in my younger days to have to go through a big damage suit; and although I

came out all right, it cost me \$700 or \$800, when there wasn't any judgment against me. That was my lawyer's fee. I am ready to help any man. Now, do you understand me?

Dr. G. C. Savage: It is the moral effect of this feature that does the good. Until the defense feature of the Medical Association of Pennsylvania was adopted, suits were as common as pig tracks in all of the large cities, and in the country as well. They are fast fading away. There are fewer suits in the city of Philadelphia pending to-day than ever before, and even in this state. When lawyers know that the State Medical Association is behind every honest person engaged in the practice of medicine, then the lawyer is going to be a little slow about taking a case, unless he absolutely knows that there is a great deal in it. The moral effect is what we pay the \$1 for, largely; but, of course, there will be a sum in the treasury to pay the lawyer. Lawyers can be obtained in proportion to the sum that the party to be defended is able to pay. I suppose that a good lawyer could be gotten in Nashville to defend a case of that character for \$100 paid out of the treasury under the control of our Brother Miller there. I don't know. I haven't consulted about that. What we want is the moral effect that this defense feature brings into prominence.

Dr. Dulaney: The feature in this defense business is to bring about a unit of purpose. That is the main thing. It is not the aid so much—of course, the aid goes a long way—but we know in the past so many lawsuits have been brought about by discord between physicians—that is, physicians in certain localities who stir up trouble. Where you have a man who belongs to your society and they have this defense and the moral support of the members of your society, then this individual man, if he has it in for Dr. Abernathy, or whoever it may be, knows better than to stir up trouble against one of his own members who is protected by this aid and this defense. This is one of the main ends in this medical defense business. There is a member here in this house that I know had a lawsuit that cost him \$1,000, and he doesn't live in Knoxville or Nashville or any place of the kind, but in Dyer County. He had two suits. To my personal knowledge, they have had four suits in Dyer County, and every one of these cases has been won in court. It was caused on account of phy-

sicians sometimes stirring up those troubles. It is an education, an educational method of getting the physicians themselves closer together; and then when the physicians let the lawyers understand that there is a unity of purpose and that all the physicians are standing together, no lawyer, except one classed as a "shyster lawyer," will take it, and even he is going to hesitate about taking a case against a physician. The physician is going to hesitate about stirring up anything he shouldn't, because he knows his name is "Dennis" when it comes to joining a society and being classed as a reputable physician. There is nothing worth more to this association than this feature.

Dr. Dixon: I think every one here has agreed that this is a very valuable thing; and the larger number of men we have in this medical defense, the better it is. Of course we all realize that the county secretary is the man to get these gentlemen to pay this extra dollar. I think one gentleman here made a very valuable suggestion a little while ago, in that there should be some official recognition of that dollar sent to each individual who takes out this insurance. I understand Dr. West puts it off the face of his cards. I have heard a number of county secretaries say if they could assure the doctor paying that he would get any kind of little card or receipt showing he had this defense, it would be much easier to get those members to take it up. It seems to me that is a matter that the committee could very well consider; and unless it is prohibitive, so far as the expense goes, it would be worth while and would increase the number that take advantage of this activity.

It was moved and seconded that Dr. Miller's report be adopted.

Carried.

Dr. Miller: May I have just a word in telling the members how to report these suits? But as to the receipt showing that you have paid your medical defense fee—everybody should have a receipt. If you pay to the secretary of your county society, he gives you a receipt; and if you send me the dollar or a post-office order for it, I send a receipt for that; and there is no need of my sending you a receipt when the others have already given you a receipt for it—you would get two receipts for the same dollar, which is not necessary and would cost quite a bit more.

Whenever you have a suit, write to the chairman of the committee, who keeps all the records of when the dollar was paid, and the man's name, and who turns the money immediately over to the Treasurer, Dr. Jere Crook. He could tell you, I dare say, in just a moment, how much money he has on hand and what the expenses have been thus far. You should write to the chairman of the committee, stating that the suit has been filed against you by an individual, giving the name of the individual, and stating that it has been filed in a certain court of what certain county, wherever the suit was filed, that the alleged malpractice was committed, and that they are making certain claims, and give me your version of the case, tell me what other physicians have seen the case, then tell me what attorneys they have employed, because General Cates knows pretty well all the attorneys in the state and is in close touch with them, and knows the leading attorneys, their strong points and their weak points, of every county. I want to say in explanation here that General Cates is expected to be here in the case that is to be tried in a few days. He has a regular attorney here, and we all know he would not be the man to appear before the jury in this county; but he has a man he feels is best for the occasion here, and so in every county. We are very fortunate in getting such a man at the price. We get him \$200 cheaper than he thought he could do it for at first and \$200 cheaper than the telegraph companies and other companies that employ him for the entire state in the same manner.

Upon receipt of your letter giving a full history of the suit, I make a copy of all that you have written me and turn it into his hands, and then have a conference with him as to what is the best plan. If it is a case not one of malpractice, as some of them have been, he passes on them and says it is not a case of malpractice and just declines to defend it. If it is a case where a man has not paid his fee, the man is not entitled to his defense, according to the ruling of this House of Delegates.

We have had a little delay in one or two cases—nothing serious—because General Cates was away from the city on account of sickness and I could not reach him. I took the matter up with his partner, who said: "There does not seem to be anything hurried about this. Wait

until General Cates gets back. We will confer over it and let you know."

Don't wait, gentlemen, as has been done in one or two cases, and wire, "There is a case tomorrow coming up against me," not even stating what court; and then we have to get busy by telegraph, which is expensive and unsatisfactory. If our general counsel should both happen to be out of the city, it would place me in an embarrassing position, for I don't know what attorneys are there. Also, in your report you could tell me that a certain attorney would be a good man and very satisfactory to you to defend you. Don't employ him and don't put him in the attitude where he thinks he ought to be employed. We don't want to antagonize him that way, for General Cates is the one to pass upon that. He knows them better than we do. The suit should be reported just as soon as you find it out; and then if you don't report it at all and tell me that the case has been brought against you, and you have just paid your defense fee a few days before, I don't know whether you are protected or not. I will write you a letter and ask you if it occurred on or before that date, and you don't say anything—don't even answer the letter. This has occurred, and satisfies me fully that you were not protected. I have two or three cases now of files not complete on account of that fact.

We will try our best to take care of you all, and the committee is always at any time open to any suggestions. After studying the case as I have and talking with various attorneys, I say that the moral influence of this work has already amounted to every member of this association to \$5 annually.

Chairman: Our Secretary has a resolution to offer, and then we will entertain a motion to adjourn, as our time for the day is past.

Secretary: This is the suggestion of several delegates, more particularly the Shelby County delegation. I have been requested to present this resolution, which I consider of great importance:

Whereas, tuberculosis causes one-third of all the preventable deaths in Tennessee;

Whereas, there has passed the Senate a bill authorizing counties to erect tuberculosis hospitals; and

Whereas, this bill is now pending in the House (House Bill No. 1191); be it

Resolved, That the Tennessee State Medical Society requests that the House of Representatives take up and pass this bill at once.

Mr. Chairman, I would move the adoption of this resolution.

Motion seconded.

Secretary: If I might say a word about it, this bill merely authorizes counties or groups of counties to erect and operate hospitals for the treatment of tuberculosis. There is nothing mandatory about it whatsoever; and inasmuch as those of us who have devoted ourselves to public-health work believe that this is one of the foundation stones of any policy that must be adopted by the state, I sincerely hope that we may have this resolution passed by the House of Delegates and in the open meeting of the general association.

Motion carried.

Dr. Gallagher: Before we adjourn, I do not think the great work of this Medical Defense Committee should go by without some recognition. It is very evident from Dr. Miller's talk here, and more evident from the result of his work, that he has devoted a lot of time and energy, and there is no honorarium in a financial way connected with it. Therefore, to show our appreciation, I move that this House of Delegates give the Committee on Medical Defense a vote of thanks by rising.

Secretary: Before that motion is put, I would like to amend it by suggesting that this committee be continued. No action has been taken about the committee. I move that it be amended so that it provide for the continuance of this committee.

Motion seconded.

Chairman: It has been moved and seconded that we give a rising vote of thanks and that the committee be continued.

Unanimously carried.

Adjourned until 8:30 A.M., April 5, 1917.

8:30 A.M., APRIL 5, 1917.

House of Delegates called to order by the chairman.

Chairman: Taking up where we left off, the Committee on First Aid—J. M. Trout, of Knoxville. . . . There seems to be no one here to report.

Conservation of Vision Committee?

Secretary: That is a committee of one. I presume Dr. Farrington will send in his report.

Dr. DeLoach: He was sick in bed when I left home.

Chairman: Public Health and Public Instruction—Dr. S. S. Crockett, chairman; Elizabeth Kayne, F. J. Runyon, W. K. Lackey, Dr. Vance, of Bristol. Any of these gentlemen present? What is the wish of the body? Shall we pass that as unfinished and recall them after a while?

Moved, seconded, and carried that these be passed and called again later.

Chairman: Report of the delegates to the American Medical Society—Dr. Crook or Dr. Bromberg.

Dr. Crook: We had a very interesting meeting in Detroit. One of the main things that this particular delegate did was to have the pleasure of nominating Dr. Dowling, upon whom a fight was being made that we thought unjust.

[Dr. Crook was here called from the room, his report to be taken up later.]

Chairman: Report of the delegate to the National Legislative Council—Dr. L. E. Burch, I suppose. The Doctor is not present.

Next would be a report of the Councilors.

Secretary: The Councilors have not got their reports complete, and I am going to suggest that the reports of the Councilors, and also the report of the Board of Trustees, be postponed until to-morrow, because it will be impossible for them to have complete reports before that time. There are so many details that come in that it is almost impossible for these reports to be made completely until the last day.

Chairman: What shall we do with the suggestion?

Moved, seconded, and carried that the reports be passed over.

Chairman: We come now to the head of "New Business"—anything for the good of the order. The chairman would like to submit this:

Resolved, That the time for holding the annual meeting of the Tennessee State Medical Association be changed from the first Tuesday in April to the third Tuesday.

We haven't had a meeting in the last eight or ten years that it has not snowed, frozen, frosted, or something, so we can't wear our new clothes. The third Tuesday is a better time for the doctor in the country to come. He finishes up his winter work about the middle of April. So this is a better time all around. I want to lay this upon the table, to be acted upon later.

Secretary: I have something that I would like

to bring to the attention of the House of Delegates. You have all noticed that our committees have been called one after another, and that only one committee has presented a report. There is a good reason why the Committee on Memoirs is not ready to report, but there is no reason why most of the others should not be ready to report. I don't know why it is, but it has been this way year after year and year after year, and it strikes me that it bids fair to continue this way. Other associations, gentlemen, have committees who really do something and who do constructive work, looking for the best interests of the association.

The Committee on Cancer of the State Medical Association of Pennsylvania has done a magnificent work, and so with numerous other committees of various state associations. Now, I believe that the Tennessee State Medical Association is equal to the best in its personnel and in the ability of its members. I don't know any reason why the Tennessee State Medical Association should not take its place among the list of state societies as a leader. We have two medical schools here that are up to date, that are aggressive. We have a profession that is making progress faster than any other state profession that I know anything about. We have a membership that is numerous enough and strong enough in every particular to make this Tennessee State Medical Association stand for something and to make it accomplish something.

I suggested in my report—I hesitated to do it, for the reason I didn't know whether these suggestions ought to come through the Secretary—but I suggested that we have two or three committees appointed, and probably there should be more—for instance, a Committee on Education. The question is a great and important question, and one that is pressing for attention by the medical profession all over the country. It seems to me that a committee who would really get down to business and study this proposition and bring in some report here, looking to the guidance of this association in what it might do, would really be worth while. And so a committee on the subject of social insurance. Now, gentlemen, just as sure as the sun shines, that is a question that is going to come to a head in Tennessee. The interests of various sorts, and some politicians, perhaps, have been able to choke off workmen's compensation Acts in this state; but it is going

to come. It has already come in many of the states, and it is also a fact that just naturally and logically health insurance is going to follow that.

Now, then, if the medical profession of the state of Tennessee does not want to be put, as somebody expressed it yesterday, into a state of comparative servitude, it certainly is the part of wisdom for them to act intelligently when these measures do come.

We ought to have a committee, according to my way of looking at it, composed of the five ablest men in this State Association, to study this subject and to make a report to this association for the guidance of the members of our society. For instance, these laws, when they are passed, will be administered by a commission. If the medical profession of the state does not see to it that the doctors of Tennessee are properly represented on that commission, you are going to get the hot end of it. It is just a common-sense proposition, Mr. President; and I do hope that this body or the general association will take some steps looking to the creation of these committees, taking care that men are put on these committees that will get right down to their knitting and bring some intelligent and some accurate reports and studies in here, so that our membership may be well informed.

As a matter of fact, Mr. President, we are now in the most successful period in the history of the State Association. We have more members, we have better members, we have better reports—more accurate reports, we have business more promptly transacted, and we have more interest in our meetings; but beyond that we are not going anywhere and we are not doing anything. As a matter of fact, the State Medical Association does not stand for anything, except as an expression of the scientific interest of its members and an expression of its willingness to stand for organized medicine in a general way.

Now, I make these suggestions, Mr. Chairman, out of a full heart. I believe that I have had opportunity to see the need for these working committees, not figureheads. There is no sense in dumping a lot of committees into our organization here that are not doing anything and are not going to do anything; but we do need to have real, sure-enough working committees that can prepare, after conscientious and extensive study, proper reports and present them here so that the State Association, as a body, may

have intelligent direction in things that are going to be pressing upon you.

Dr. Gallagher: The recommendation of Dr. West is certainly very timely. The profession does not realize what danger there is, so far as this social insurance is concerned. The Legislature may pass an Act and may so limit the fees of a physician, and that is just what they are going to do; they are going to limit the fees in such a way that it would be almost impossible for him to make a livelihood. We are just up against one of the stiffest propositions that the medical profession of this state has ever faced. Of course, when it comes right down to the final analysis of the thing, the proposition that confronts us is whether or not we are going to stand idly by and let the Legislature enact laws that will not be of benefit to the medical profession. If this medical profession stands united on this, I am sure that laws will be enacted that will be of great benefit to us.

As Dr. West says, I believe that this is one of the most important things that this medical profession has to contend with. It strikes at the very bottom of our livelihood; and laws have been enacted in other states, some of them have been good laws, some have been bad laws; and I think, as Dr. West suggests, that a committee should be appointed, and I believe that we should adopt all of his recommendations, so far as the committees are concerned.

Therefore, I move you that the recommendations of Dr. West, so far as the committees are concerned, be adopted.

Motion seconded.

Chairman: It has been moved and seconded that the recommendations of our Secretary be adopted in regard to the appointment of these extra committees. Any further discussion?

Dr. Miller: It occurred to me as Dr. West was talking that there was a reason for this lack of reports, and I have tried to see what that reason is. I believe it is because of the fact that these committees are not permanent committees. A man is appointed this year, and perhaps he does not know it himself for three months or six months, possibly nine months. I dare say that half of the members of the committees named there on the program do not know that they are members of those committees now, because many of them are not here. If all the committees were permanent committees, like our Committee on

Medical Defense, then we could go ahead and plan something. I don't believe it is a good plan for the President to appoint new committees every year, because he appoints some friend or some one he wants to compliment and who does not know anything about the work. I think these committees ought to be permanent; and if one man can't serve or gives us bad service, then the Chair ought to have the right to appoint a man in his place.

A Delegate: I want to emphasize what Dr. Miller says. I have seen frequently the bad effects of just having temporary committees. While up, I would like to ask the question: Is it possible to have a permanent committee unless these men are elected every year as delegates? I suppose a man need not be a member of the House of Delegates to serve on these committees. If that is not true, it ought to be true.

Chairman: No, that is not necessary.

A Delegate: I am glad to hear that; and, as you said, we must be an aggressive body and must keep moving forward or we will slide back. We must keep running to keep where we are. Therefore, I wish to emphasize this, and hope this will be done, and that you will take time to get a committee that will work. There are committees and committees, and two-thirds of them won't work, and one-third work a little bit; and then there are a few that work a good deal, as this permanent committee that we have has amply demonstrated.

Dr. Dulaney: I amend the motion by making the appointment for two years.

A Delegate: Think it ought to be three.

Dr. Dulaney: And that there be six members instead of five.

Chairman: If we had a committee of about five or six and appoint two new ones each year, that would always give us on the committee some old men and some new ones, like we have with our Councilors.

A Delegate: I think that is a good suggestion, but it seems to me that there ought to be not less than one man appointed each year and give them five years at least on the committee. It doesn't seem to me that three years or two years would be at all adequate for this committee work; and in that way, appointing one man each year, it would give but one new man to break in, and, it seems to me, would be far better.

Chairman: Good suggestion. Let the senior member be the chairman.

Dr. McSwain: I don't think it a good plan changing that committee (if these men that are on it have done good work, they have done a lot of study) and to put a new man on there that has not worked out anything; and we must have men who work out something, and, when the committee is appointed, put somebody on the committee that will work. I would make the suggestion that it would be a good idea not to change that committee, but make it permanent and composed of men that will work and do something.

Dr. Dulaney: I change my amendment, then, to make the appointment of one new man every year, one man to serve one year, one two, one three, one four, one five, which will give us one new man each year, the members of the committee thereafter to serve five years.

Motion seconded.

Dr. McSwain: Now, in this changing and bringing in one new man each year, you probably might get rid of the best man you had on that committee, somebody else wanting to go on.

Chairman: We could put him back if we wanted him, reappoint him at the end of five years. I think the question has been fully discussed and understood. All in favor of the motion—

A Delegate: Which one of the committees are you talking about now? I made two recommendations. I understand this is the Committee on Social Insurance?

Secretary: We disposed of that committee yesterday. We accepted their report and continued the committee.

Chairman: Social Insurance?

Secretary: O, I thought you said "Medical Defense!" The suggestion was a Committee on Education, a Committee on Control of Cancer (which, I believe, can do a very valuable educational work), a Committee on Social Insurance, and also a Committee on Medical Preparedness, for want of something better.

A Delegate: Five on each committee?

Secretary: I think it a bad plan to have six members on anything. I think you ought to have a majority. It is mighty easy to hang a thing up and split it wide open with an even number of members.

Chairman: It works out better that way.

Delegate: What motion are you voting on?

Chairman: That all of these committees be appointed for five years. We will take up the amendment first—that the committee be composed of five members, to serve one, two, three, four, and five years, with the appointment of one each year.

Dr. McCabe: I think that ought to be discussed more fully.

Dr. Tigert: Let him discuss it, if he thinks so.

Dr. McCabe: I don't see where you are going to gain anything by appointing one new member every year, because you are swapping a horse that has already been trained for a green one.

Chairman: If the member was valuable, he could be reappointed.

Delegate: Suppose he didn't work?

Chairman: Get him out by ouster proceedings.

Dr. McCabe: Well, if it is your intention to reappoint him, then that is all right.

Chairman: The motion as amended is that the committees be composed of five members, to be continued for five years, with the appointment of one new member each year. All in favor of that motion make it known by saying, "Aye;" contrary, "No." The ayes have it.

Delegate: That applies to all of these committees mentioned by the Secretary?

Chairman: Yes, and the Chair will withhold the appointment of these committees for a short time until he gets a little more enlightenment. I suppose, though, that would come under the business of the incoming President; so we will postpone it until after his inauguration to-morrow.

Dr. LeQuire: Will there be three committees there?

Chairman: Four committees.

Dr. ———, from Putnam County: In view of the fact that there is now before the Legislature a bill to give each county the right to establish a tuberculosis hospital, I would suggest that we add also a Committee on Tuberculosis.

Secretary: We have a Committee on Tuberculosis. That committee is already established.

Dr. Burns: I would like to ask if this appointment of permanent committees is not an amendment to the By-Laws. I think it is.

Secretary: These committees are not really permanent, for the reason that we have pro-

vided for the change of a man each year. It is just simply a matter of the manner of appointing a committee instead of making it a permanent committee. That amendment, as I understand it, saved that situation, and there is nothing in the By-Laws to conflict.

Chairman: "Such committee shall be appointed by the President, unless otherwise provided," which gives us power.

Dr. Burns: I think you are wrong about it.

Dr. Miller: I would like to ask if the Legislative Committee, the Committee on Tuberculosis, and the Committee on Memoirs could not be put under this same head, if they are not now?

Chairman: It goes on here and sets out the committees which should be appointed.

Secretary: I will read it, if you will allow me. [Reads from Constitution and By-Laws.]

Then it defines the duties of the committees that are specifically named, and that is all there is to it. There are certain committees provided for in the Constitution and By-Laws already.

Dr. Miller: They are appointed every year, and they ought to be continued like the other committees.

Secretary: They are specifically provided for, and their appointment is already provided for.

Dr. Miller: It says "unless otherwise provided."

Secretary (handing him Constitution and By-Laws): Read this.

Dr. Miller: Mr. Chairman, I make this point: That Dr. West has already gotten up here and called attention to the trouble he is having over reports of these committees. These committees are named, and it says they shall be appointed by the President, unless otherwise ordered. Now we are perfectly willing for the President to appoint them. What we want them to do is to continue over, like these other committees, and then we would get better and more efficient work.

Take the Legislative Committee. I didn't know who the Legislative Committee was until the program was printed. There has been a question brought up in our local association, and I have had three or four conferences with our members about it, that we wanted to introduce in the Legislature here; and I advised not to have anything introduced that did not have the approval of this committee of our body, our Legislative Committee. I had to tell them I did not know who the chairman of that committee was,

but that if sent to Dr. West it would reach the proper hands. We should have it so arranged that at least one member could hold over, so that all of us could know at least who one man was.

Secretary: I feel called upon to say that the personnel of all these committees was published more than once. Whenever I could do it, I have had a standing page carrying the personnel of the committees and of the officers of the association; but it costs money to run that page, and I have to figure on running the Journal like you would have to figure on living on a dollar a day. We get right square up to the edge sometimes, and we save something by cutting out that page temporarily and putting it back when we can use it without it costing anything. Every committee has been published in the Journal.

Dr. Miller: When was it published first? I hunted there.

Secretary: The whole transactions of the House of Delegates and of the committees are in the May Journal every year, and, as I say, they have been published at other times. I have made an effort to continue this standing page, but I can't do it unless I get more money to run the things on, to keep from running on the rocks.

Chairman: The question raised by Dr. Miller is whether we will include in this resolution here all these committees.

Dr. Black: I think the men can only serve well by serving for a long time, and I make a motion that they serve like the other committees.

Chairman: We are going back to some matters that pertain to the printed Constitution, and it has been fully discussed as to whether we have a right to do that.

Delegate: I make a motion that we proceed with business.

Motion seconded and carried.

Chairman: Anything else under the head of "New Business?"

Dr. Savage: Some little confusion came about because of the time of the delivery of the address of the President last year and a different time this year. I think the experience last year emphasized the importance of having the presidential address at the opening of the first session. You will recall that the members were all present at the time that the President last year delivered his address, at the beginning of the first session, and will re-

call that yesterday there was only a handful in the room when the program was commenced.

Because of the arrangement last year, the officers of the Section of Eye, Ear, Throat, and Nose, supposing that it would be arranged this same way this year, made a program that was broken into considerably last night. Now, I believe that this body can well afford to follow the example of other bodies of medical men. I think they should make it a permanent thing to have the presidential address at the opening of the first session. Therefore, I move you that hereafter the President shall deliver his address at the opening of the first session of our meeting, if I can get a second.

Motion seconded.

Chairman: It has been moved and seconded that the time for the delivery of the presidential address shall be the opening meeting of the session.

Carried.

Chairman: Anything else under the head of "New Business?"

Dr. Savage: There is one other thing that comes from the Eye, Ear, Throat, and Nose Section, and that is that we necessarily have some expense in carrying out the program; and the Treasurer and our Secretary, of course, not feeling authorized to help them pay the expense, why, I bring the matter before this body this morning and move that the necessary expenses in carrying on the work of the Section of the Eye, Ear, Throat, and Nose shall be met out of the common treasury.

Motion seconded.

Chairman: It has been moved and seconded that the expenses of the Section of the Eye, Ear, Nose, and Throat of the Tennessee State Medical Association be met out of the current funds of the general association. Is there any discussion of the motion?

Secretary: This body last year took action providing for the payment of a stenographer of the Section on Ophthalmology and Otolaryngology. You fellows are laughing because you can't say that like I can. That expense is going to be, as a matter of fact, just about what the entire membership of the section pays into the State Association. We provide a meeting place for them, we provide a stenographer (the very best we could get), and any other expenses that they have to bear I do not know anything about. I

am perfectly willing, so far as I am personally concerned, to encourage this section in every way; but I am not willing for the association in general to bear more than their fair share of the expense of their meeting. I don't know what expense they are going to run up; and inasmuch as the expense that is incurred, or will be incurred, in the present meeting will equal in amount the entire amount of money that is paid in by the members of the section, I think that the matter ought to be considered at least.

Chairman: How much extra expense would there be?

Dr. Savage: The only item of expense not provided for was the picture apparatus that had to be used last night and may have to be used to-day. It doesn't amount to a great deal, but we have no treasury of our own. We are a part of this great body, and have been helping to bear the expenses all the years. We want the work of that section to be equal to the work done by any single body of men on the earth. We are a part of the Tennessee State Medical Association; and although a young baby, only two years old, we ought to be dressed up occasionally and patted and petted, but not spoiled, and there is no danger of spoiling us. The officers cannot afford to undertake this expense themselves, and we do not feel like asking for additional contributions from the membership of the body. The expense will always be kept within bounds. You want good work done there, and we want good work done everywhere, and we want our work to be so arranged that we can have the privilege of attending the general sessions more than we were able to attend them at this meeting. Of course nothing else is to be expected than that we shall be provided for in the direction I suggested.

Dr. Breeding: I do not think this section should ask this House of Delegates to sign a blank check. Unless they can give us some definite idea about what their expenses would be—their maximum expenses, at least—I move to table this motion.

Dr. Dulaney: I can give you some idea about what the expense would be, because it cost me about \$30, and I never asked whether anybody else would be willing to do the same thing or not. I didn't ask for any remuneration whatever, but it takes about \$25 or \$30. The Secretary must write to each member throughout the state, and

it is a right smart of work getting up the program and providing necessary apparatus for carrying out the work.

Chairman: I still haven't had my question answered as to how much the section wants. The stenographer consumes the entire dues.

Dr. Broyles: As that has not been definitely answered, I suggest that our section, as I am a member of it, be requested to let this body know what that expense is. I say this: They will not ask for more than is necessary, but it is nothing but right that you should know what it is.

Dr. McSwain: It occurs to me that as the Secretary has just stated that practically all the dues paid in by this section are consumed by them, it might be a very good idea to give them all the dues they pay and let them spend them on the section, and as much more as they please. They are the men that make the money. Why not let them have all of that? And if there is any additional expense, let them foot the bill.

Dr. Griffin: When I was a schoolboy, at one time I heard the old professor get up and say, at the beginning of the session, that when you get ready to make a request of any member of the faculty, to always consider if every other member of the school could do the same thing, and still the faculty have time, etc., to attend to the school. Now we have other specialists in our association. A section could be formed on surgery, internal medicine, neurology, and other things, if this association is prepared to take care of any section on the same basis that might care to organize. It seems to me it is nothing but right that the section on Eye, Ear, Nose, and Throat should bear this additional expense, if they want it. If we can organize other sections, have money enough to organize other sections out of the general funds of the association—if we haven't money enough for that, it doesn't seem that it would be right to go into the funds for a special section when we would not have that money for any other section that would like to be formed.

Dr. Sanford: Any special section that might see fit to organize in the Tennessee Medical Society should meet any expense that might come to that section.

Chairman: Is there any motion before the House?

Dr. Sanford: No, sir.

Chairman: Any special section of the Ten-

nessee State Medical Society that sees fit to organize, that brings about a special expense for those members of that special section, should assess themselves the additional expense. If those members of that special section would do this, it would thus make each special section self-supporting. We have now the Eye, Ear, and Throat Section to look after. Maybe next year we will have the nerve baby, the next year the surgical baby, and the next year the abdominal baby, and so on.

Dr. Savage: You are bordering on grounds that tend to produce cleavage, and that is ruin. We want to be a section of the State Association. We don't want to be an independent body; but if we have to bear our expense, somebody will be wanting to have a complete separation, and that would not be desirable. This section was created by this body. It was created not to be thrown off by itself, to pay its own expenses. If it is proper for the Treasurer of this association to pay for the picture apparatus in the other room, and for two or three of them, then it is proper for the Treasurer of the association to pay for the throwing of the pictures on the screen to illustrate the papers that need illustrating in our work, and the treasury is able to do it. The additional expense is only \$10, and the motion that has just been made to offer in lieu (which is never parliamentary at all; if you will consider Roberts and others, you will find that)—that would make us bear the expense of the stenographer as well. That is all wrong. We are a part of the association. We were created by this body as a section of the association. If any other section wants to form, they will have to be created in the same way—by act of this body; but if they are not thus created, then if a branch is organized at all, it would fly off at a tangent, and that would be very hurtful to the broad field of medicine as we want it to be cultivated. We want to be of you and with you and for you, and we want you to be of us, with us, and for us as well.

Dr. Black: It seems to me that the motion was already made by Dr. Savage.

Chairman: Yes, sir.

Dr. Black: Personally, I feel this association should help them out and help pay their expenses—pay all their expenses. As he says, they withdrew from the regular session with the consent of this body; consequently, they were do-

ing nothing more than they were allowed to do, and must be supported.

Dr. Tigert: I think Dr. Savage is eminently correct in his position about this matter. If there is any one thing that ought to be maintained here, it is the spirit of democracy, and I think that ought to be on the absolute basis of equality. As he has said, this section, the name of which Dr. West so euphemistically pronounces, is a baby of this organization. If we can't afford to maintain it, then we can't afford to have the baby. We ought to have used prevention long ago; but as we have it, I am in favor of supporting it and dressing it up becoming its two-year-old birthday. If you don't allow these gentlemen to have their expenses paid out of our general treasury, that will tend to make this body of which Dr. Savage is a member a separate and distinct body. It has a distinct tendency in that direction. I believe that the demand he makes is a reasonable one. He doesn't want to spend any large amount of money. It is a very small item he asks for; and if we haven't enough money to run this organization, then I am in favor of increasing the dues of the whole organization; but I believe we ought to look after these gentlemen in this particular. If, on the other hand, they feel that they can put their hands in their pockets and have what they please, there will be a strong tendency on their part to have independent programs, because they feel they are paying for them; and, the first thing you know, we will have a great wide division in the Tennessee State Medical Association about a matter that could easily be nipped in the bud at the present time. We are sure they would not ask for anything unreasonable.

Dr. Miller: What motion is before the House, Mr. Chairman?

Chairman: A motion that we pay the expenses of the Section of the Eye, Ear, Nose, and Throat.

Dr. Dixon: It looks to me like we have gotten up a great argument here this morning about nothing.

Chairman: It is about \$10.

Dr. Tigert: That is right.

Dr. Dixon: Dr. West says it is the custom of the society to furnish them a meeting place and a stenographer. That is about all they furnish any one else. It is the duty of the Committee on Arrangements in the city in which they meet to furnish them a moving-picture machine. I don't

see where any great argument comes up. Of course we want to take care of these babies; but it looks to me like they are in very good shape right now, with a meeting place provided and a stenographer provided, and the local Committee on Arrangements should furnish them a moving-picture machine or anything like that they needed. This has been the custom in the past, and this machine was provided here by the local committee for use in the general session; and if they had made known their wants, that they wanted some sort of projection machine, we would have gotten one for them.

Secretary: I must ask just for a short statement about this matter. I don't believe there are any members in the Medical Association of Tennessee that have ever given more service and more intelligent service than the members of the present Section of Eye, Ear, Nose, and Throat. We have had Dr. Savage, Dr. Broyles, Dr. Dulaney, Dr. Ellis, and others as Presidents of the association; at least one of their members has served as Secretary of the association. I made the statement relative to the expense simply for the reason that you might know the facts. Now, \$10 isn't much, \$40 isn't much, \$100 isn't much; but it is a whole lot when it is all you have. I just want the House of Delegates to understand that we run right square up at some time during the year to the amount of money that we have in hand. Now we are going to be able to show at this meeting a balance of about \$2,000; but after a few months, that \$2,000 is going to dwindle into about \$2. I want to say, too, in fairness to myself, that had I had the request sooner, I would have provided that section this time with a lantern, and there would have been nothing more said about it; but so many have a tendency to run in right at the last moment with requests and I have so many things to do that I cannot do them all at the last moment. But I don't want the House of Delegates to understand that I oppose for one moment the payment of any of the expenses of this section. I think, like Dr. Tigert exactly, that the section ought to be taken care of; but I don't want you all to go away from here and come back next year with a deficit staring you in the face.

Dr. McSwain: I fully agree with the gentlemen, Dr. Tigert and others, that these gentlemen have rendered fine service; and we certainly ought to allow this amount without question.

We ought to take care of these expenses; and if the Secretary is so short of funds, let's raise the dues of this association to something like a respectable sum, and let us, instead of paying \$2, pay \$5 to the Medical Society and have something decent.

Chairman: All in favor of the motion as stated by Dr. Savage make it known by saying, "Aye;" the contrary, "No."

Motion carried.

Chairman: Anything else under the head of "New Business?" We will go back to the report of our delegates to the American Medical Society.

Dr. Crook: I was just about to remark that about the only thing your delegates did in particular was in the selection of the trustees of the American Medical Association. We found out, through certain ways we have of finding out these things, that an effort was going to be made to shelve Dr. Dowling just because he happened to pass through Chattanooga with a few placards and was sued. He was going to be made the goat for the American Medical Association, and we didn't propose to stand for it. I had the pleasure of nominating Dr. Dowling, and he went in without any trouble. The man they intended to run against Dr. Dowling they ran against the next trustee, and he was gloriously defeated.

Like meetings everywhere, except in Atlantic City, it was hard to get around from place to place in Detroit. That seems to be the only place in the United States where you can find out who is there and get the real enjoyment out of the session.

Secretary: What about the delegation from Tennessee?

Dr. Crook: We had a fine representation from Tennessee. It was very largely in evidence all along the streets of Detroit, and in other places, too. I didn't see them any other place, but I heard they were all there, all around.

Chairman: What shall we do with the report?

Moved, seconded, and carried that the report be accepted.

Delegate: We heard Dr. Crook's report on insurance. These other men want to know something about that, and it might be well to have that report.

Dr. Crook: I had to telephone for my report to be sent in. I forgot it at the last minute, but I will be ready to present it when we meet again.

It coincides with the report of the Secretary, but I will have it here when we meet again.

Adjourned until 2 P.M.

2 P.M., APRIL 4, 1917.

House of Delegates called to order by the chairman.

Chairman: We will go back a little bit on the order of business and take up the report of the Councilors. It is a very important feature, and we ought to have a full report from the Board of Councilors.

Secretary: Mr. Chairman, I might say that a very unfortunate oversight was committed last year in that no chairman of the Board of Councilors was selected to succeed Dr. A. F. Richards, and the Board of Councilors, as a matter of fact, has been in rather a disorganized condition this year. Very few of them have shown up at the meeting thus far. Dr. Griffin, from the Ninth District; Dr. Beasley, from the Seventh; and Dr. Fox are here, but not in the house at the present time. I would suggest, Mr. Chairman, that we have reports from the Councilors here, if they are ready, and the others we will just have to let pass.

Chairman: If there are any of the Councilors here, we will be glad for you to make your report.

Dr. Griffin: I will say here that I had good intentions about making various visits this spring; but owing to my brother being unfortunately selected to represent our county in the Legislature, I have had no one to leave my practice with. From the reports I can get, our district is in pretty fair condition, except Crockett County. I have made an effort to see those from Crockett County here; but I have only been able to see one man, though I have tried to find the others. They want to do better, if we can just get organized down there; so we aim to get up some kind of a system of organization and get Crockett County in line. Crockett County, however, has increased one over last year; one other member reported. Dyer County is in good condition; over 38 last year. We have fallen down 8 on the report at this report. Gibson County, 25; Haywood, 8; Lake, 8; Lauderdale, 26; Obion, 19; and Weakley, 14. That is the best report I can give you.

Secretary: I think there is one other member reported from Lauderdale County since the 26.

I would also like to say, relative to Crockett County, that a report from that county was received this morning, and there are now 10 members, which is better than they have done in three years.

Chairman: Any other district present—any member of the Board of Councilors? If not, we will have to pass to "New Business." Any of you think of anything else you want to bring up under the head of "New Business?"

Dr. Griffin: Under the head of "New Business"—I hardly know where it belongs; but it always seemed to me, at least for the last few years, from the trend of things, that the State Medical Association, as a body, has ultimately got to meet the question of the future supply of doctors. It seems to me that under the present number of students in the medical schools, when we get old, like our President, and die out, there is going to be a lack of doctors in this country if something is not done toward stimulating the number of students. It probably will have to be done through the legislative bodies to make our university requirements. We do not want to lower them, you understand, but make it so that the poor boy can still get a medical education. It will probably come up under our Legislative Committee. I think, as our university has gotten a million-dollar gift, that there ought to be some means of giving the students in Tennessee an opportunity of acquiring a medical education on a cheaper basis, so that the boys who used to go to school can still go to school. I make that as a suggestion that I think ought to be taken up some time.

Chairman: You have heard the gentleman cast aspersion on the Chair by putting him in the old man's class.

Delegate: Mr. Chairman, I do not think our chairman is old; I think he is prematurely gray.

Chairman: Another one!

Dr. Sanford: I do not think we can make any change. This medical education business is worked out by the national board. Of course it is hard on the poor boy. I have heard about the poor man all of my life. I didn't have a dollar when I was nineteen years of age and started studying medicine, and graduated when I was twenty-four years old and had \$8. Any man who wants to can make the money and go through. He can make a doctor if he has any

grit in him; and if he hasn't, he doesn't need to be a doctor.

Dr. LeQuire: There are a great many boys in the country who would be glad to get a medical education, want to study medicine, but the thought of the expense discourages them. When they investigate and find out what it requires to become a doctor, they try to hunt some other profession. By the time a boy takes his university course and gets his degree he is usually up toward twenty or twenty-five—that is, the poor boy. The man who has money and can put his boy in school and keep him in school can get him through a little younger than that, but the poor boy who has to work his way through school must miss so much time out of his schooling in order to make money enough to get to the university and high school that, by the time he has got his literary education, he is getting then too old to enter then upon the study of medicine. Then it is an expensive thing to go to a medical college, and he must have some very good job or very good friend; and when he gets through with his medical education, he is going to be very greatly in debt, and it will take him years of practice to get that paid back. I don't believe in lowering the standards of medical education or the requirements to get into the school; but, as Dr. Griffin suggested, I believe we ought to work to the end to get an appropriation to our university and to the Medical Department of the university so a poor boy that aspires to become a doctor could get the benefit of some endowment to these schools that would take him through school without involving so much energy to make the money to pay his way, and also to keep him from being too far in debt when he gets his medical certificate. We ought to think over these things and get them before the doctors of the country so that we can get the best material into the profession. Now it is not the rich man's son that makes the best doctor, as you older men know. It is the boy that is brought up—not in poverty, but still he is the common boy. He has the good in him to make a man, and he wants to make a man, and he needs help to get his education, his literary education and his medical education, and there should be some means provided by which he can do that.

Dr. McSwain: I was a typical country boy, and I am rounding out my fiftieth year in the practice of medicine. I don't look to be that old,

but it is a fact. I think we are approaching a subject over which we have no control, and I don't believe it is a very proper subject to agitate—a question looking to the cheapening of the physician's education. I believe that any boy sixteen or eighteen years old who wants to make a doctor, if he won't spend quite so much money for automobiles and sweethearts and things like that, and will stick to it and work, can attend the medical school by a little assistance, which some good neighbor is always ready to give a young man where there is anything in him. If we make this thing easy by endowing schools and universities so that a man can get his medical education free, as my neighbor on the right says, he does not appreciate it. It takes a certain amount of friction to make a man, anyway; and if he has made and earned it by hard licks, by the time he is a graduate of medicine he not only knows something, but knows how it came. The fact of the business is, we have had too many doctors, anyway. I don't look for any scarcity of them. The woods are full of them.

Secretary: This discussion emphasizes what I stated—that we should have the Committee on Education, who could study the broad, general subject and bring in a report that might give guidance to the State Association and take some action about definite things that come up.

Dr. Griffin: What I mean is that a general committee of that kind might be prepared to look after such matters. Regardless of how it may seem at this time, there will be a day, and it won't be a hundred years from to-day, when there will be a scarcity of doctors, unless there is something done to provide for that feature of endowing the Medical Department of our university. Every other department is endowed. Of course this little body has nothing to do with that; but it is a start, a nucleus to work from, and those things ought to be looked after for the future. I have a boy that is starting out to study medicine, and he has had his two years and an A.B., and we will make a doctor out of him; but all the other boys are not going to have that opportunity. If I had had the five-year course and the requirements as they are to-day, I know I would never have graduated, because I did not have the grit and ability of my friend, Sanford. This subject really should be looked after. It must be looked after some day, and there ought to be a start.

Chairman: That will be taken up under the head of "Duties of the New Committee." I take it there is no other new business. Can any one think of any other new business coming up this afternoon? I want to call attention to the fact that we will expect the Treasurer to report in the morning, and we will also have the report of the Board of Trustees and the Nominating Committee. The Board of Trustees, I think, is one of the most important bodies we have, and we will expect them to report promptly to-morrow morning at 8:30 o'clock. We will now hear from the treasurer of the Medical Defense Committee.

Dr. Crook: Paid out on order from the Secretary, \$355.06; balance now on hand and in bank, \$1,181.21. The Secretary turned over to me to-day checks and money to the amount of \$153, which makes a total on hand of \$1,334.21.

Chairman: That is the Medical Defense Fund, and you see it does not look like they are defending very much, or spending very much money on it at least.

Dr. Crook: I will state that I had occasion to call on the committee myself. I have been carrying for some years protection in the Medical Protection Company, of Fort Wayne, Ind. I had a suit filed against me for \$10,000 damages, and the plaintiff was unable to secure, apparently, a lawyer in my town to take up this suit, which was a very absurd proposition on its face. He went to a neighboring town to get a lawyer to file the suit. I notified the Secretary, and I also notified him that I expected to have the Fort Wayne company pay the damages. I was insured up to \$10,000, and I didn't want to call on our slender fund. The Fort Wayne people promptly told me to get the best lawyer in Jackson and have him draw on them for expenses. The lawyer went over and had the thing expunged from the record and thrown out of court. It didn't cost the Medical Defense Fund a penny; but no doubt the moral effect of being insured in this fund is worth \$10,000 of actual money cost to the association, because the whole State Association being banded together to defend one another is a detriment in the minds of the best lawyers in a community. No lawyer wants to be placed in the attitude of being a blackmailer, and that is what most of these suits are, and the moral effect is worth ten times as much as the money we usually have on hand.

Adjourned to meet at 8:30 A.M., April 5, 1917.

8:30 A.M., APRIL 5, 1917.

The House of Delegates was called to order by the chairman.

Chairman: The House of Delegates will now take up the consideration of any business that may come before it. First, we will take up the report of the Committee on Memoirs.

Secretary: It seems to be an impossibility for me to get a list of the names of those who have died during the year. I have a partial list, but that is all I have.

Chairman: I will ask the Secretary to read it.

Secretary: I haven't it right at hand. I have been waiting to add to it. It has been customary to have a memorial page in the Journal to those who have died during the year, and as soon as we can get that list complete we will have that page to the deceased members.

Delegate: Why not have the Secretary to take care of this for us?

Chairman: I think it would be a good idea to announce on the floor of the house that if any one knows of any one having died during the year, to ask that it be reported to Dr. McSwain or the Secretary.

Is Dr. Gallagher present?

Secretary: No, Mr. Chairman; but I have his report. The trouble about this report has been due to no fault of Dr. Gallagher's, but to the fact that the bank has misplaced one or two checks. We have also had some checks which were turned down and refused payment, and these have been misplaced at the bank.

Chairman: Our check or the other fellow's check?

Secretary: The other fellow's check. The total receipts from advertising amount to \$2,661.68; membership dues, \$3,651.50; and the balance on hand at the end of the last year was \$1,507.76. The interest on daily balances has not been computed because of the lack of time which the bank had. We have one interest deposit of seventeen dollars and something, and there will be another entry on interest account. This leaves a balance on hand, Mr. President, of approximately \$2,000. Just the exact figure we cannot give until we can secure the bank balance.

The Auditing Committee have all gone, I believe; but I have arranged to have this report sent to them as soon as the book is fully balanced

in bank and to have the report approved by them before it is published. This is a matter of some embarrassment both to Dr. Gallagher and myself—that this report has to be presented in this way; but I again want to assure the House of Delegates it is no fault of Dr. Gallagher's. The trouble arose from the fact that the first of the month was on Sunday, and quite a number of reports from county secretaries were in hand on Saturday afternoon, but could not be delivered until Monday. I thought these men were entitled to membership, and held their checks over until Monday. Then when we took our book to the bank to be balanced, we got it "balled up."

Delegate: I move that the report of the Treasurer be accepted, and that thanks be rendered to the Secretary, showing the gratification of the body over the good standing, and that the report be acted on by the Committee of Auditors before being published, and that a vote of thanks be extended to our worthy Treasurer for his efficient services.

Motion seconded and carried.

Chairman: The next order of business will be the report of our Committee on Nominations. Are you ready to report?

Dr. McCabe: I was made secretary of that committee and will read their report.

President: Give attention to the report of the Nominating Committee.

Dr. McCabe: This committee, as you know, is composed of three men from East, three from West, and three from Middle Tennessee.

East Tennessee: For President three names were recommended—William St. John, of Bristol; L. L. Sheddan, of Knoxville; Dr. Newell, of Chattanooga. Vice President—H. L. Sheddan, of Johnson City. For Councilor for Second District—S. R. Miller, of Knoxville. That completes East Tennessee.

Middle Tennessee: Vice President, H. M. Tigert, of Nashville. Councilor of Fourth District, W. Scott Farmer; of Sixth District, W. C. Dixon. This completes Middle Tennessee.

Secretary: Dr. Farmer is no longer in the Fourth District, but in the Sixth District.

Chairman: He is in the asylum.

Dr. McCabe: West Tennessee: Vice President, W. O. Sullivan, of Newbern.

Secretary: I think the Nominating Committee will have to correct that matter. The only way I know for them to do is to have them to

meet again and submit another name in lieu of Dr. Farmer's.

Chairman: I will declare the House of Delegates at ease until they make the nomination for the Fourth District.

Dr. Savage: I may be wrong, but it seems to me that our laws provide for three nominations for Vice President.

A Delegate: Mr. Chairman, any man is eligible to office who is a member of the House of Delegates, with the exception of the President, Vice President, and Secretary. Any delegate shall be ineligible to office except those of the trustees of the Journal and Councilors.

Dr. Tigert: I want to ask if it does not provide the committee shall bring in three nominations for every position.

The Secretary read the provisions of the Constitution and By-Laws bearing upon elections.

Dr. Tigert: I move you that the Nominating Committee withdraw for a few minutes until they can get their nominations straight, and, in the meantime, that the House continue business.

Chairman: So ordered, without any motion being put.

Dr. Tigert: I want to bring up a little matter here, if it is in order.

Chairman: Yes, sir.

Dr. Tigert: As Chairman of the Legislative Committee, I have found that the following doctors in the Legislature have been especially valuable to the State Association, not only in helping us in the passage of one or two laws, but also in the killing of a good many. I would like for the House of Delegates to authorize the Secretary to draw up a proper resolution, with all the proper "whereases" in it, thanking the following gentlemen—Drs. Hauk, Hart, Griffin, Allen, and Rucker—for the services they have rendered the Tennessee State Medical Association at the present session of the Legislature, and that the Secretary be instructed to send each one of these gentlemen a copy of the resolution.

Motion seconded.

Dr. Crook: Let me add, if without objection of the mover of the motion, Mr. McLaren, who is a druggist, and who has a son who is a physician, and has done yeoman service for us, and I would take pleasure in adding his name.

Dr. Tigert: I take pleasure in accepting that amendment. I want to state to this House of Delegates that he has really been a most impor-

tant member in the Legislature to us, not only this year, but last year. He has been one of the best friends the medical profession ever had in the Legislature.

Motion carried.

Secretary: The Nominating Committee submits the name of Dr. T. G. Pollard, of Nashville, in lieu of Dr. H. M. Tigert, and Dr. W. M. Johnson, of Sparta, in lieu of Dr. Scott Farmer.

The nominations for President: Dr. William St. John, of Bristol; Dr. L. L. Sheddan, of Knoxville; Dr. Edwin T. Newell, of Chattanooga.

Chairman: Don't we hear any nominating speeches?

Secretary: Out of date. Can't do it.

Chairman: The Nominating Committee will report and bring in another report. Dr. Johnson is not in the Fourth District; he lives in the Third.

Dr. McCabe: We will substitute Dr. Shipley.

Chairman: I will appoint Dr. McCabe and Dr. Potter to take up the ballots for President. Prepare your ballots upon Dr. St. John, Dr. E. T. Newell, and Dr. L. L. Sheddan.

Secretary: Mr. Chairman, the ballot results in 27 votes having been cast for Dr. E. T. Newell, of Chattanooga; 6 for Dr. Sheddan, of Knoxville; and 1 for Dr. St. John, of Bristol.

Moved, seconded, and carried that the election of Dr. E. T. Newell, of Chattanooga, as President be made unanimous.

Chairman: Dr. Newell is the unanimous choice of the House of Delegates for our next President.

Now your ballots for Vice President. Of East Tennessee, Dr. H. M. Cass, of Johnson City.

A Delegate: I move that the Secretary cast the vote of the House of Delegates for Dr. H. M. Cass, of Johnson City.

Dr. Roberts: I make a motion that we suspend the rules, and by unanimous vote we will have the right to change it.

Chairman: All in favor of suspending the rules, that we may nominate by acclamation, make it known by saying "Aye."

Unanimously carried.

Dr. Dulaney: I move you that the Secretary cast the ballot for Dr. Cass, of Johnson City, for Vice President.

Seconded and carried.

Secretary: I take pleasure in casting the unan-

imous ballot of the House of Delegates for Dr. H. M. Cass, of Johnson City, for Vice President for East Tennessee.

Chairman: I so declare him elected by the House of Delegates.

For Vice President for Middle Tennessee, Dr. T. G. Pollard, from Nashville.

Moved, seconded, and carried that the Secretary be instructed to cast the unanimous ballot of the House of Delegates for Dr. T. G. Pollard, of Nashville, as Vice President for Middle Tennessee.

Secretary: I take pleasure in casting the unanimous ballot of the House of Delegates for Dr. T. G. Pollard, of Nashville, as Vice President for Middle Tennessee.

Chairman: I declare him elected by the House of Delegates.

A Delegate: I nominate Dr. Sullivan, of West Tennessee, for Vice President.

Dr. D. J. Roberts: I nominate Dr. H. D. McGill, of Clarksburg. I have known him as practicing medicine for the last thirty-five years. We want some of the old blood. There is plenty of time for young men there, like Dr. McSwain; besides, Dr. McGill is in every way competent; and I take great pleasure in nominating him for Vice President.

Chairman: I declare the nominations for Vice President for West Tennessee to be Dr. W. O. Sullivan, of Newbern, and Dr. H. D. McGill, of Clarksburg. Prepare your ballots, and the same two gentlemen will take them up.

Secretary: The ballot results in the casting of 21 votes for Dr. W. O. Sullivan and 11 votes for Dr. H. D. McGill.

Dr. D. J. Roberts: Dr. Sullivan is a personal friend of mine, as well as Dr. McGill, and I will take pleasure in making a motion that his election be made unanimous.

Motion seconded and carried.

Chairman: We will now take up the election of Councilor for the Second District.

A Delegate: I make a motion, Mr. Chairman, if there is no opposition, that we nominate all these Councilors at one time.

Chairman: Dr. S. R. Miller, of Knoxville.

A Delegate: I move it be made unanimous.

Dr. D. J. Roberts: Can't have a better man.

Chairman: It has been moved and seconded that—

Secretary: It has been customary to have all Councilors at one time.

Chairman: Let us follow that procedure, then. All in favor of that say "Aye;" opposed, "No." The motion carries.

Secretary: I take pleasure in casting the vote of the House of Delegates for Dr. S. R. Miller, of the Second District; Dr. W. C. Dixon, of the Sixth District; Dr. A. B. Dancy, of the Eighth District; and Dr. W. T. Black, of the Tenth District.

President: The Chair declares the gentlemen whose names have just been read in your hearing as Councilors for their respective districts.

We will now have the election of trustees. For the Board of Trustees the nominations have been: Dr. J. F. Gallagher, of Nashville, as the one to be elected at this meeting. I will entertain a motion looking to his election by acclamation.

Dr. D. J. Roberts: I move, if there is no objection, that the Secretary be instructed to cast the unanimous ballot of the House of Delegates for Dr. Gallagher as trustee.

Motion seconded and carried.

Secretary: I hereby cast the ballot of the House of Delegates for Dr. J. F. Gallagher as trustee for the ensuing three years.

President: I declare Dr. Gallagher elected.

Now we will take up the delegate to the American Medical Association. The Nominating Committee has brought in the name of Dr. A. F. Richards, of Sparta.

Moved, seconded, and carried that the Secretary cast the vote of the House of Delegates for Dr. Richards as delegate to the American Medical Society.

Secretary: I take great pleasure in casting the ballot of the House of Delegates for Dr. A. F. Richards, of Sparta, as delegate to the American Medical Association.

Chairman: I hereby declare Dr. Richards elected as our delegate for the next two years.

Delegate: Are we entitled to three now?

Chairman: Only one to be elected now and one alternate. The nomination of the committee for alternate delegate is Dr. W. B. Burns, of Memphis.

It was moved that the Secretary cast the vote of the House for Dr. Burns.

Carried.

Dr. Tigert: Point of order. You can't elect

him if he is a member of the House of Delegates.

Secretary: That is one of the places where there is an exception, and I cast the ballot of the House of Delegates for Dr. W. B. Burns.

Chairman: The next thing now is the nomination for our Secretary.

Dr. Dulaney: The Nominating Committee decided that it would work the same Secretary as we have been working, and all we want is for him to do a little better. I nominate Dr. Olin West for Secretary for 1917.

Seconded.

Dr. D. J. Roberts: I wish to state that the wise men came from the East; hence we went to the West. We show our wisdom by voting for Dr. West.

Chairman: I will entertain a motion that he be elected by acclamation.

Moved, seconded, and carried that Dr. Roberts cast the unanimous vote of the House of Delegates for Dr. Olin West, of Nashville, for Secretary.

Dr. D. J. Roberts: Mr. President and Gentlemen: I believe that I am doing good work for the Tennessee State Medical Society and for the honor of medicine in the "Volunteer State." I take pleasure in going to West and casting the unanimous vote for him.

Chairman: I declare Dr. West duly and unequivocally elected; and we will now hear a one-minute speech from our worthy Secretary, Dr. Olin West, of Nashville. [Applause.]

Dr. West: I have no one-minute speech and no other speech to make, except, as my friend, Dr. Roberts, says, that I remind the secretaries that they send their reports in time hereafter.

I would like to say, Dr. Chairman, we are now closing the most successful year from very many standpoints the association has ever had. It seems to me that the opportunities presenting themselves for this year are tremendous, and that the profession of the state is in better position to take advantage of these opportunities than it has ever been. I believe, Mr. Chairman, from the spirit that has been manifested at this meeting and at the last several meetings, that the profession of the state has determined to take better advantage of the opportunities that are offered us.

I would like, Mr. Chairman, in acknowledging the honor that has been conferred upon me,

which, of course, I appreciate most deeply, to say that my gratitude is owed and is given to the county secretaries and to all other officers of the association who have done the major part in making the report that was made here this year possible.

I shall continue to do the very best of which I am capable, and ask your continued coöperation, and a little more ardent coöperation in some respects, in order that we may make the year 1917 even more remarkable in the history of this association than the last. I thank you.

Dr. D. J. Roberts: Now that we have nominated him and elected him, I think it in order that we tender him a unanimous vote of thanks for his very efficient work in the past.

Chairman: For his almost invaluable services. I know what the gentleman has done, and I don't believe that we have a member in Tennessee that would devote the time and work to the affairs of this association that Dr. West has done.

Standing vote of thanks given unanimously.

A Delegate: There is one thing, I think, as members of the medical profession, we ought to attend to, and that is that the society should go on record and thank the Legislature for what they have done for higher education in Tennessee in the state university.

Chairman: Would it not be better to bring that up on the floor of the house, before the whole body, rather than in the House of Delegates? I would be very glad indeed to entertain that motion in the general session.

Chairman: The Chair wants to change his resolution just a little bit that was laid on the table from yesterday from the first Tuesday to the third Tuesday.

Secretary: This resolution cannot be changed now, unless it is changed with the idea of lying over for a year, just as it was introduced with that idea. The resolution which comes up this morning under the rules was introduced by Dr. Cowden to the effect that: "Resolved, That the time for holding the annual meeting of the Tennessee State Medical Association be changed from the first Tuesday in April to the third Tuesday in April." Under the law, this resolution will have to lie over for a year; and if this is changed, it will have to lie over all the same.

A Delegate: It can be amended now, Mr. President, can it not?

Chairman: I want to amend it by substitut-

ing for the word "third" the word "second," and let this State Association meet, like it has been always, the first Tuesday. As it is now in the first week of April, but very few county societies in the state but have their meetings the first week of April; and thus they are necessarily required to miss their meetings at home, where they always ought to be, if they can.

Secretary: Now, Mr. Chairman, I am going to oppose that, for the reason that the time was originally changed in deference to the wishes of the members of the Shelby County Society and some other gentlemen in West Tennessee. At the time it was changed we were having but few men from Memphis and but few men from here and yonder from West Tennessee in our State Association, and the membership in that section of the state was far below what it is now. In order to accommodate them it was changed to the first Tuesday in April, and the result of that is that Shelby County reported 208 members last year—more than one-eighth of the entire membership of the association. This year they have already reported up to the present time 206 names. Inasmuch as the matter was changed to meet the desires and conveniences, and inasmuch as that change has resulted in building up the biggest medical society—

A Delegate: Will you pardon a statement? The Mississippi Medical Society has changed to the third Tuesday.

Secretary: If that is true, that removes my objection.

Delegate: Can't we have our next meeting on the second Tuesday?

Secretary: No, it will have to lie over for a year.

Dr. Savage: Isn't that a by-law that we have just voted on? If so, by unanimous vote it should be alterable at any meeting. If it is constitutional, it must lie over for a year.

Secretary: I remember at the time the change was made before this same procedure was gone through with, and that the final result was that the resolution had to lie over a year. That was under the presidency of Dr. Broyles.

Dr. Savage: The Constitution and By-Laws make it clear that we can change the time right now. There is nothing specific against it.

Chairman: The Chair will entertain a motion to change the date of the meeting.

A Delegate: I make a motion that we change

the time of meeting of this association from the third Tuesday to the second Tuesday.

Dr. Broyles: Mr. President, I move the adoption of this resolution as amended.

Chairman: It has been moved and seconded that we adopt the resolution as amended for the change of the time of the meeting of the Tennessee State Medical Association. All in favor of the motion make it known by saying, "Aye;" contrary, "No."

Motion carried.

Dr. D. J. Roberts: I move that the editor of the Journal take space enough in the Journal during this year to publish in one of the issues the Constitution and By-Laws.

Chairman: The truth of the business is, we ought to have a revision of our Constitution. There are a whole lot of things needing it.

Dr. Broyles: Mr. Chairman, why not appoint a Committee on the Revision of the Constitution? I make the motion that we appoint a committee of three on Revision of the Constitution and By-Laws, to be submitted for publication.

Motion seconded.

Chairman: It has been moved and seconded that we appoint a committee of three on Revision of the Constitution and By-Laws and have them report at our next annual meeting in Memphis. All in favor of the motion make it known by saying, "Aye;" contrary, "No."

Motion carried.

Dr. D. J. Roberts: I move that the committee consist of the trustees. They are conversant with it.

A Delegate: I believe it should be done in the city of Nashville, with the Secretary as chairman.

Secretary: I think that is a fine thing. I know I am going to have to do the work, so I don't think it makes much difference. The suggestion that the Board of Trustees make the revision is a good one.

Chairman: I will place on that committee Dr. Olin West (chairman), Dr. Roberts, and Dr. J. F. Gallagher, who is a member of the Board of Trustees.

Now we are ready for the trustees' report. Dr. Broyles is the chairman.

Dr. Broyles: I do not have any detailed report of the affairs of the Board of Trustees. Of course we are depending on our worthy Secretary to do that.

I am sorry to announce to you the serious illness of Dr. Brooks, who is in a distant state endeavoring to restore his health. The affairs of the board are in most excellent condition.

The high cost of living even affects our Journal, much as you may be surprised. The publisher wants more; everybody wants more. We have heretofore been able to print the Journal for \$190. This year the lowest bid is \$210. I think this is a perfectly reasonable bid in consideration of the general increase of all things connected with this life. For the details of the affairs of the Journal I will ask our Secretary, Dr. West, to furnish all that you may demand. He has them always at his fingers' and tongue's end, and this is included in the Secretary's report.

Chairman: Anything else to come before the House of Delegates?

Secretary: The selection of a place of meeting, Mr. Chairman.

Chairman: We are now under the head of selecting a place for our next meeting.

Dr. Crook: We are to have West Tennessee for next year. Memphis wants it and is going right after it. I hope Jackson will have enough hotel facilities by the time she swings around again. We haven't enough hotel facilities now. I nominate Memphis.

Dr. DeLoach: I second the motion. I happen to belong to the society down there, and I take pleasure in seconding it.

Dr. Broyles: I move that we close nominations and go to Memphis.

Seconded and carried.

Chairman: I know of nothing else coming before the House of Delegates.

Dr. Savage: I believe that the medical profession of Tennessee ought to rebel against the railroad authorities because of the way they have treated us. There is a meeting of farmers, and the railroads give them free transportation. They have conventions of teachers, and the railroads give them free transportation. Now it seems to me that the profession of medicine in Tennessee ought to expect of the railroad authorities that we should be allowed to travel on round-trip tickets and at reduced rates, and I believe that it can be done; but, in order that it may be done, steps will have to be taken that would look in that direction.

There would be seven hundred or a thousand men in this meeting if it had not been for the

practical certainty that every man would have to pay full fare coming and going; and my understanding is, that is exactly what they will have to do. There are men in Jackson, I am told, who would have come if there had been round-trip tickets on sale or any sort of assurance that there would be good treatment in the way of reduction.

The way to do and the thing to do, and I believe it can be done; and if it can't be done, we can let them know that there is somebody that thinks they are really treating us badly.

Chairman: That is a pretty good suggestion.

Dr. D. J. Roberts: I happen to know something about the Secretary's struggles with the railroads. They always met me with this assertion: They are controlled by the Southeastern Passenger Association.

They are not now, and the free pass does not have anything to do with intrastate; it is interstate. The railroads have their surgeons throughout the state. They furnish them passes, and they furnish passes through friends. But it is mighty hard to get them to do anything. Still, I think this association should put up an appeal that they give us as reasonable rates as they give the farmers. The trouble is, we never can get up the number of tickets.

I move that the unanimous vote of this association be that the railroads be requested to give us a reasonable rate at our annual meetings. We do a great deal for the state and the railroads, and I move that a committee of three be appointed to bring this before the railroad authorities in the capital city of the state.

Secretary: I feel like it is incumbent on me to say a word about this matter, because some of you might infer that I have not made every effort to get rates for you. The trouble has not been altogether with the railroads. Every year for three years we got a reduced rate offer, but the members would not do what was required to get the benefit of this offered rate. They would not buy an agreed number of tickets. Many would come on passes; but last year I even got the consent of the Southeastern Passenger Association to count the passes, and I could not get enough tickets here, counting the passes, intrusted to my hands to get rates, though they had only required 200, and we had 300 men registered and some who were not registered. That

is not the railroad's fault. On the other hand, it is possible for men coming from the city or any section to get a reduced party rate that is really the best rate that can be gotten.

Another feature of this thing I have not mentioned heretofore, except to one or two of my friends: There is always some fellow or two or three fellows who lose a ticket. They always say I lost it, and I have had to pay for it. I had to pay \$25 or \$30 for tickets last year, and I got tired of that proposition. So this year I didn't make any effort to get reduced rates, except to find out that the only thing that would be offered was the certificate plan. After Dr. Bromberg's experience of several years and mine of three years, and finding it impossible to get the doctors themselves to comply with the rules, I gave the thing up.

Dr. Dulaney: Any defense of Dr. West I think unnecessary. No one would think of such a thing at all. We know our Secretary's work; but this certificate plan is a farce absolutely—a farce that gets you there and then asks you for a certificate. If I were a Secretary, I would not undertake any such thing as that; but the thing is to try to get the railroads to offer a certain rate—a certain round-trip rate—to the State Association, so much per ticket, so that appointing this committee in the three Grand Divisions of the state—they can take it up with these railroads and insist on a fair and square deal. I don't blame Dr. West at all.

Dr. Savage: I think Dr. West understands I don't bring any blame against him.

Secretary: I understand that.

Dr. Savage: But I believe it can be done and ought to be done. We have been treated outrageously, I think.

Secretary: If the Doctor will accept an amendment, I move that this committee consist of Dr. G. C. Savage as chairman and two other members. I say that because I believe Dr. Savage can come more nearly getting this rate. More than that, Dr. Savage believes he can get it.

Motion seconded.

Chairman: It has been moved and seconded that a committee of three, with Dr. Savage as chairman, with the privilege of selecting the other two members, be appointed.

Motion carried.

Dr. Savage: When I was a member of the

House of Delegates at the Saratoga meeting, I had to pay my round trip, coming and going. So did everybody else who went from south of the Ohio River. And I got so mad I went down to Major Danley's and I told him that if rates were not given the American Medical Society through his territory the next year, then this association certainly would not come into his territory. He telegraphed Mr. Ridgeton to that effect; and when I got to Saratoga, I had a three-page telegram from Mr. Ridgeton; and the result of that little bluff I put on them was, I got one round-trip rate for New Orleans from all over this country. [Applause.]

Dr. D. J. Roberts: I will state, Mr. President, the three years I was Secretary I had a good deal of correspondence with Mr. Ridgeton, and found him a pretty artful dodger.

Dr. LeQuire: There is another point I would like to call attention to—another matter of importance. Our Secretary is not getting enough revenue out of the advertisements that are carried in the Journal to run the Journal in the way that it should be run and to keep up a first-class Journal. I believe that it would be a good idea for this House to raise the dues or in some way make a rule that will bring in more revenue to the Secretary, so that he can give us a better Journal or as good as he has been giving. Now, as I understand, his expenses are going higher, and he is getting no more revenue than usual. Therefore he is liable to run out, and we want to get as good a Journal as we have been getting and keep him from being financially embarrassed at the same time. I would make a motion before this house that we raise the dues to \$2.50 or \$3, or even \$5 if necessary, to make the amount sufficient to bear all expenses and give us a good Journal.

Chairman: I think this is embodied in our Constitution or would have to be in the Constitution. I think that that is a splendid suggestion, and I believe it would be voted unanimously by the body. I have just asked our Secretary here—

Secretary: There is no sum mentioned; it can be fixed by the House of Delegates; but while I feel that it is only a matter of time, and a comparatively short time, until the revenue of the association must be materially increased, I should dislike to see action taken increasing the dues at this time. We have built up a splendid

membership. If we increase the dues, I believe we will decrease the membership very materially, and I would rather "hustle along" on the present basis.

If we can just get the members to patronize the advertisers in the Journal, we can get an increased revenue that will meet our demands. If I can just get you—YOU I am talking to—to do that, we can increase the revenue enough to meet the demands made upon us with the membership dues that we have. We have the very best advertisers in the United States in this Journal, and we could get many others.

A Delegate: Are you advertising the Nashville surgical houses in there?

Secretary: Yes.

Dr. Griffin: I think if we could just make it a point—each man who buys or orders—to state that he is sending the order because it is advertised in the Journal, it would help our Secretary materially in securing good advertisers.

Secretary: One large firm hesitated quite a while before renewing their contracts, and there are other firms that have withdrawn their advertisements from time to time because they say they got comparatively small returns from advertising in our Journal. Of course you must remember that an advertising paper with 1,600 or 1,700 gross circulation is not a very desirable medium, unless the men it goes to will patronize the advertisers. Of course we are not trying to make money; but if the members, instead of buying from some Tom, Dick, or Harry that doesn't advertise—many of them boast that they sell you doctors; many of them have written me that they didn't have to advertise in the Journal, that they sold you doctors, anyhow—and so if you will buy from those who do advertise, it will insure the continued patronage of those advertisers.

Dr. D. J. Roberts: I don't like to appear so much, but still I am very deeply interested. I can't be with you much more; but I know something of the troubles of your Secretary, as for eight years I struggled with the financial situation in your treasury. I took hold of it when it was in debt and brought it out; but it is a dangerous thing to raise the dues. We have 1,600 members. We ought to have 2,500 added to our membership. It won't cost much more to handle that membership than it does your present membership, and it will increase the value of the

Journal as an advertising medium. If you increase your dues, your membership will drop. I know \$2 doesn't seem much to some of you, but it is to some in the country, especially when they have their railroad fare to pay also. I know the country doctor. I go out into the country sometimes, and I have lived there. We want membership. We want every doctor in the state in this association. We should have at least 2,500 to 3,000 members. Let's get to work, when we go to our homes, and get the doctors in our counties who are not members to come in. Where there is no society, get them to organize a society, and organize new societies. Go to work for membership, and that will furnish you more finances.

Dr. Griffin: I have known things that were done in this way to pay: If the Secretary will, in large type, put something in a prominent place where every doctor will see it every time he sees the Journal, "If you patronize the advertisers in this Journal and so state on every order, it will help the Journal," and do this every issue, and put it in a place where they can't miss it, I think it would act as a reminder to some who are thoughtless. I know our Secretary does it to a great extent. I have seen it; but if you will give it more prominence—the more prominence you give it and the more persistence with which you put it before your membership, the more apt they will be to heed it and to get in the habit of trading with the advertisers and telling them why. For the last few years I have made a habit of doing that thing, mentioning where the advertisement was seen, for the benefit of the Journal, or the benefit of whatever journal whose advertisement I am answering, regardless of what it is. I know if you keep driving at the thing and keep putting it in a prominent place, more men will get to doing it; and if it is brought up on the floor of the house in the general session and explained to the membership, the necessity for it, there will be that many more that will do it.

Dr. Crook: Of course the railroads, whenever they are asked about reduced rates for an occasion of this sort, ask me how many will attend. We can answer that by giving the average attendance for the past two or three years; but the official registers do not represent the attendance here, and we should have some organized effort to get every man that belongs to the

association to put his name on that registration book. There are fifty or seventy-five men who have been coming in and out and who have not registered. We should have some sort of a button, to be procured only upon registration; and before he can come in the door, he should be required to have that button on.

Dr. Dossett: We have a great many advertising men who come in to see us, and we make it a point to ask them if they advertise in our Journal. If they say, "Yes," we talk to them; if they do not advertise in the Journal, we tell them there is nothing doing.

Dr. Griffin: Very good, very good.

Secretary: Much obliged to you.

Dr. McSwain: We have only one name reported to us for the Committee on Memoirs. It is rather pitiful that men die all over the state belonging to the association and no notice whatever is taken of their death. Please, when we go into general session, won't you ask for that information?

Chairman: We will do that.

Adjourned.

REPORT OF DR. J. F. GALLAGHER, TREASURER.

TABLE I.

MEMBERSHIP CASH, 1916-1917.

FROM SECRETARIES.

April, 1916		
8 Dr. H. H. McCampbell, Knox County	-----	\$ 4 00
8 Dr. H. P. Larimore, Hamilton County	-----	4 00
	(1914 and 1915 dues)	
8 Dr. H. P. Larimore, Hamilton County	-----	4 00
8 Dr. H. P. Larimore, Hamilton County	-----	2 00
8 Dr. H. P. Larimore, Hamilton County	-----	8 00
8 Dr. W. P. Allen, Rhea County	-----	5 00
	(\$1 Medical Defense)	
8 Dr. M. E. Rust, Fayette County	-----	2 00
8 Dr. J. D. Carlton, Obion County	-----	2 00
8 Dr. J. D. Carlton, Obion County	-----	2 00
8 Dr. B. M. Little, Montgomery County	-----	2 00
8 Dr. J. M. Crider, Decatur County	-----	2 00
8 Dr. M. A. Blanton, Greene County	-----	2 00
8 Dr. B. M. Tittsworth, Jefferson County	-----	3 00
	(\$1 Medical Defense)	
8 Dr. W. E. Gallion, Morgan County	-----	2 00
8 Dr. W. E. Gallion, Morgan County	-----	2 00
8 Dr. W. E. Gallion, Morgan County	-----	2 00
8 Dr. W. E. Gallion, Morgan County	-----	2 00
8 Dr. W. Likely Simpson, Shelby County	-----	6 00
8 Dr. W. Likely Simpson, Shelby County	-----	6 00
8 Dr. W. Likely Simpson, Shelby County	-----	20 00
8 Dr. W. Likely Simpson, Shelby County	-----	20 00
8 Dr. W. Likely Simpson, Shelby County	-----	20 00
8 Dr. W. Likely Simpson, Shelby County	-----	20 00
8 Dr. W. Likely Simpson, Shelby County	-----	20 00
10 Dr. T. E. Sawyer, Weakley County	-----	3 00
	(\$1 Medical Defense)	

10 Dr. John R. Parker, Sumner County-----\$	25 00	15 Dr. W. K. Vance, Sullivan County-----\$	14 00
(\$7 Medical Defense)		21 Dr. G. F. Aycock, Davidson County-----	14 00
11 Dr. W. R. Irish (no fund check)-----	2 00	30 Dr. E. W. Cöcke, Hardeman County-----	2 00
(March 23, 1916)			
11 Dr. B. F. Fyke, Robertson County-----	2 00	July	
13 Dr. E. H. Jones, Rutherford County-----	2 00	5 Dr. H. H. McCampbell, Knox County-----\$	2 00
13 Dr. Dabney Minor, Bradley County-----	14 00	5 Dr. W. G. Saunders, Madison County-----	4 00
13 Dr. W. K. Vance, Sullivan County-----	8 00	6 Dr. M. A. Beasley, Maury County-----	2 00
15 Dr. W. K. Vance, Sullivan County-----	2 00	10 Dr. W. K. Vance, Sullivan County-----	4 00
17 Dr. T. E. Sawyer, Weakley County-----	3 00	11 Drs. Lewis & Blue -----	2 00
(\$1 Medical Defense)		(Medical Defense)	
17 Dr. H. P. Larimore, Hamilton County-----	14 00	11 Dr. T. J. Hickman, Loudon County-----	2 00
20 Dr. Charles Griffith, Coffee County-----	2 00	11 Dr. B. J. High, Smith County-----	2 00
20 Dr. B. M. Tittsworth, Jefferson County-----	3 00	12 Dr. L. J. Lindsey, Tipton County-----	3 00
(\$1 Medical Defense)		(\$1 Medical Defense)	
21 Dr. W. Likely Simpson, Shelby County-----	20 00	17 Dr. H. H. McCampbell, Knox County-----	2 00
24 Dr. L. J. Lindsey, Tipton County-----	21 00	17 Dr. J. H. McSwain, Henry County-----	2 00
(\$7 Medical Defense)		17 Dr. H. P. Larimore, Hamilton County-----	4 00
24 Dr. J. D. Carlton, Obion County-----	2 00	(\$2, 1915 dues)	
25 Dr. W. T. Bell, McNairy County-----	6 00	17 Dr. J. W. Cox, Washington County-----	5 00
25 Dr. W. K. Vance, Sullivan County-----	6 00	(\$1 Medical Defense)	
26 Dr. Charles Griffith, Coffee County-----	2 00	24 Dr. M. A. Blanton, Greene County-----	2 00
28 Dr. T. A. Patrick, Lincoln County-----	2 00	25 Dr. E. S. Hopper, Crockett County-----	2 00
29 Dr. LeRoy Wilkins, Dyer County-----	20 00	27 Dr. M. E. Rust, Fayette County-----	4 00
(\$4 Medical Defense)		28 Dr. Dabney Minor, Bradley County-----	2 00
		28 Dr. J. D. Alexander, Lake County-----	2 00
May		31 Dr. J. L. Edwards, Haywood County-----	4 00
2 Dr. J. D. Carlton, Obion County-----\$	2 00	31 Dr. W. Likely Simpson, Shelby County-----	6 00
2 Dr. J. H. McSwain, Henry County-----	2 00	August	
4 Dr. W. Likely Simpson, Shelby County-----	10 00	1 Dr. J. W. Sanford, Lauderdale County-----\$	2 00
4 Dr. W. P. Allen, Rhea County-----	2 00	21 Dr. B. J. High, Smith County-----	2 00
5 Dr. M. E. Rust, Fayette County-----	4 00		
5 Dr. U. G. Jones, Anderson County-----	4 00	September	
6 Dr. H. P. Larimore, Hamilton County-----	6 00	14 Dr. T. E. Sawyer, Weakley County-----\$	8 00
11 Dr. F. M. Boyatt, Scott County-----	3 00	(\$2 Medical Defense)	
(\$1 Medical Defense)		22 Dr. W. W. Hill, Roane County-----	2 00
11 Dr. J. D. Carlton, Obion County-----	2 00	23 Dr. W. Likely Simpson, Shelby County-----	8 00
11 Dr. S. T. Parker, Henderson County-----	2 00	25 Dr. H. Claude Guerin, Dickson County-----	2 00
12 Dr. J. S. Lyons, Hawkins County-----	8 00	26 Dr. H. P. Larimore, Hamilton County-----	2 00
15 Dr. J. D. Carlton, Obion County-----	2 00	26 Dr. E. H. Jones, Rutherford County-----	6 00
17 Dr. J. D. Carlton, Obion County-----	2 00		
18 Dr. C. P. Martin, Putnam County-----	6 00	October	
(\$2 Medical Defense)		2 Dr. E. W. Cöcke, Hardeman County-----\$	2 00
19 Dr. W. W. Hill, Roane County-----	2 00	5 Dr. E. LeRoy Wilkins, Dyer County-----	2 00
20 Dr. Dabney Minor, Bradley County-----	2 00	6 Dr. H. P. Larimore, Hamilton County-----	6 00
22 Dr. T. J. Hickman, Loudon County-----	4 00	12 Dr. J. D. Carlton, Obion County-----	2 00
(\$1 Medical Defense)		16 Dr. W. Likely Simpson, Shelby County-----	2 00
24 Dr. J. D. Carlton, Obion County-----	2 00	18 Dr. W. T. Bell, McNairy County-----	1 00
24 Dr. J. D. Carlton, Obion County-----	16 00	(Medical Defense)	
(\$4 Medical Defense)		19 Dr. W. Likely Simpson, Shelby County-----	6 00
25 Dr. B. F. Fyke, Robertson County-----	2 00	23 Dr. T. E. Sawyer, Weakley County-----	3 00
26 Dr. E. W. Cöcke, Hardeman County-----	2 00	(\$1 Medical Defense)	
26 Dr. G. A. Brandon (Secretary Parker), Henderson County -----	2 00	25 Dr. W. Likely Simpson, Shelby County-----	2 00
27 Dr. J. L. Edwards, Haywood County-----	4 00	26 Dr. G. F. Aycock, Davidson County-----	18 00
29 Dr. L. J. Lindsey, Tipton County-----	8 00		
(\$2 Medical Defense)		November	
29 Dr. H. Claude Guerin, Dickson County-----	2 00	15 Dr. John R. Parker, Sumner County-----\$	3 00
30 Dr. W. Likely Simpson, Shelby County-----	28 00	(\$1 Medical Defense)	
30 Dr. W. P. Allen, Rhea County-----	2 00	16 Dr. E. C. Freeman, Giles County-----	4 00
30 Dr. H. P. Larimore, Hamilton County-----	12 00	18 Dr. H. P. Larimore, Hamilton County-----	6 00
(\$2, 1915 dues)		(\$2, 1914 dues)	
30 Dr. G. F. Aycock, Davidson County-----	16 00	25 Dr. A. F. Richards, White County-----	2 00
June		December	
1 Dr. John R. Parker, Sumner County-----\$	3 00	16 Dr. W. Likely Simpson, Shelby County-----\$	2 00
(\$1 Medical Defense)		21 Dr. H. P. Larimore, Hamilton County-----	6 00
2 Dr. M. A. Blanton, Greene County-----	2 00	(\$6, 1916 dues)	
6 Dr. W. G. Saunders, Madison County-----	4 00	21 Dr. H. P. Larimore, Hamilton County-----	8 00
6 Dr. B. H. Woodard, Giles County (for himself) -----	3 00	(\$8, 1915 dues)	
(\$1 Medical Defense)		21 Dr. H. P. Larimore, Hamilton County-----	2 00
8 Dr. T. E. Sawyer, Weakley County-----	3 00	(\$2, 1914 dues)	
(\$1 Medical Defense)		27 Dr. H. P. Larimore, Hamilton County-----	10 00
9 Dr. M. E. Rust, Fayette County-----	2 00	(\$2, 1915 dues)	
14 Dr. C. P. Martin, Putnam County-----	3 00	28 Dr. H. H. McCampbell, Knox County-----	4 00
(\$1 Medical Defense)			

BEGINNING 1917 MEMBERSHIP DUES.

December					
4	Dr. W. R. Irish, Campbell County-----	\$	15	00	
	(\$3 Medical Defense)				
14	Dr. C. P. Martin, Putnam County-----		21	00	
	(\$7 Medical Defense)				
19	Dr. E. LeRoy Wilkins, Dyer County-----		21	00	
	(\$5 Medical Defense)				
19	Dr. Douglas Hayes, Grundy County-----		8	00	
	(\$2 Medical Defense)				
20	Dr. Douglas Hayes, Grundy County-----		2	00	
21	Dr. H. P. Larimore, Hamilton County-----		10	00	
27	Dr. A. J. Guinn, Polk County-----		18	00	
27	Dr. T. M. Roberts, Monroe County-----		33	00	
	(\$11 Medical Defense)				
28	Dr. Douglas Hayes, Grundy County-----		6	00	
	(\$2 Medical Defense)				
30	Dr. Owen H. Williams, Hardin County-----		10	00	
	(Returned by bank and redeposited when money order received for it)				
30	Dr. Owen H. Williams, Hardin County-----		2	00	
30	Dr. Owen H. Williams, Hardin County-----		4	00	
January, 1917					
2	Dr. R. A. Whitaker, Decatur County-----	\$	12	00	
2	Dr. H. P. Larimore, Hamilton County-----		22	00	
	(\$6, 1916 dues)				
2	Dr. W. G. Saunders, Madison County-----		2	00	
2	Dr. B. J. High, Smith County-----		32	00	
2	Dr. F. M. Boyatt, Scott County-----		18	00	
	(\$6 Medical Defense)				
2	Dr. A. F. Richards, White County-----		33	00	
	(\$11 Medical Defense)				
2	Dr. G. F. Aycock, Davidson County-----		42	00	
	(\$4, 1916 dues)				
4	Dr. M. A. Beasley, Maury County-----		48	00	
	(\$2 Medical Defense)				
4	Dr. H. P. Larimore, Hamilton County-----		20	00	
	(\$4, 1915; \$10, 1916)				
4	Dr. J. T. Hayes, Anderson County-----		18	00	
5	Dr. Walter Dotson, Wilson County-----		28	00	
	(\$4 Medical Defense)				
6	Dr. H. P. Larimore, Hamilton County-----		16	00	
	(\$4, 1916 dues)				
5	Dr. R. A. Whitaker, Decatur County-----		4	00	
8	Dr. Robert M. Young, Knox County-----		2	00	
	(\$2, 1916 dues)				
8	Dr. H. P. Larimore, Hamilton County-----		6	00	
8	Dr. W. R. Irish, Campbell County-----		10	00	
9	Dr. J. O. Wood, Coker County-----		18	00	
9	Dr. W. A. Sams, Unicoi County-----		17	00	
	(\$5 Medical Defense)				
10	Dr. Walter Dotson, Wilson County-----		3	00	
	(\$1 Medical Defense)				
11	Dr. J. D. Carlton, Obion County-----		39	00	
	(\$1 Medical Defense)				
11	Dr. B. J. High, Smith County-----		2	00	
11	Dr. T. J. Hickman, Loudon County-----		13	00	
	(\$1 Medical Defense)				
11	Dr. J. L. Edwards, Haywood County-----		14	00	
	(\$4 Medical Defense)				
12	Dr. S. T. Parker, Henderson County-----		54	00	
	(\$8 Medical Defense)				
15	Dr. C. T. Carroll, Hamblen County-----		51	00	
	(\$17 Medical Defense)				
15	Dr. C. L. Hays, Tipton County-----		42	00	
	(\$15 Medical Defense)				
15	Dr. W. G. Saunders, Madison County-----		20	00	
15	Dr. H. P. Larimore, Hamilton County-----		16	00	
15	Dr. E. M. Fuqua, Davidson County-----		142	00	
	(\$2, 1916 dues)				
16	Dr. R. H. Miller, Shelby County-----		210	00	
16	Dr. B. M. Tittsworth, Jefferson County-----		27	00	
	(\$9 Medical Defense)				
16	Dr. T. J. Hickman, Loudon County-----		2	00	
17	Dr. H. P. Larimore, Hamilton County-----		2	00	
	(\$2, 1916 dues)				
17	Dr. E. LeRoy Wilkins, Dyer County-----	\$	26	00	
	(\$8 Medical Defense)				
17	Dr. E. W. Mabry, Jackson County-----		24	00	
	(\$8 Medical Defense)				
22	Dr. S. T. Hardison, Marshall County-----		54	00	
	(\$8 Medical Defense)				
22	Dr. B. M. Little, Montgomery County-----		3	00	
	(\$1 Medical Defense)				
22	Dr. K. S. Howlett, Williamson County-----		30	00	
	(\$6 Medical Defense)				
22	Dr. H. P. Larimore, Hamilton County-----		18	00	
22	Dr. Robert M. Young, Knox County-----		76	00	
22	Dr. J. D. Alexander, Lake County-----		18	00	
	(\$2 Medical Defense)				
24	Dr. W. W. Hill, Roane County-----		23	00	
	(\$3 Medical Defense)				
24	Dr. J. L. Edwards, Haywood County-----		2	00	
24	Dr. F. M. Boyatt, Scott County-----		3	00	
	(\$1 Medical Defense)				
24	Dr. T. E. Sawyer, Weakley County-----		20	00	
	(\$4 Medical Defense)				
27	Dr. T. J. Hickman, Loudon County-----		2	00	
31	Dr. A. B. Qualls, Overton County-----		15	00	
	(\$5 Medical Defense)				
31	Dr. W. T. Bell, McNairy County-----		22	00	
	(\$6 Medical Defense)				
February					
3	Dr. Hartwell Weaver, Dickson County-----	\$	26	00	
	(\$4 Medical Defense)				
3	Dr. Owen H. Williams, Hardin County-----		2	00	
3	Dr. E. S. Hopper, Robertson County-----		2	00	
5	Dr. H. S. Shoulders, Robertson County-----		18	00	
	(\$6 Medical Defense)				
6	Dr. E. E. Northcutt, Warren County-----		13	00	
	(\$1 Medical Defense)				
6	Dr. Douglas Hayes, Grundy County-----		3	00	
	(\$1 Medical Defense)				
7	Dr. W. G. Saunders, Madison County-----		4	00	
8	Dr. W. G. Saunders, Madison County-----		4	00	
9	Dr. C. L. Hays, Tipton County-----		6	50	
12	Dr. H. P. Larimore, Hamilton County-----		12	00	
12	Dr. E. M. Fuqua, Davidson County-----		32	00	
12	Dr. J. T. Hayes, Anderson County-----		2	00	
13	Dr. R. M. Young, Knox County-----		32	00	
15	Dr. W. T. Bell, McNairy County-----		3	50	
	(\$1 Medical Defense)				
15	Dr. W. G. Saunders, Madison County-----		2	00	
16	Dr. J. W. Sanford, Lauderdale County-----		60	00	
	(\$20 Medical Defense)				
19	Dr. W. G. Saunders, Madison County-----		10	00	
19	Dr. W. K. Vance, Sullivan County-----		36	00	
20	Dr. C. L. Hays, Tipton County-----		3	00	
	(\$1 Medical Defense)				
20	Dr. W. C. Brown, Chester County-----		4	00	
21	Dr. W. G. Saunders, Madison County-----		4	00	
24	Dr. M. A. Blanton, Greene County-----		41	00	
	(\$5 Medical Defense)				
26	Dr. F. B. Reagor, Bedford County-----		34	00	
26	Dr. W. W. Hill, Roane County-----		13	00	
	(\$3 Medical Defense)				
26	Dr. J. R. Richardson, Blount County-----		20	00	
	(Returned by bank for indorsement and then redeposited)				
28	Dr. W. T. Bell, McNairy County-----		6	00	
	(\$2 Medical Defense)				
28	Dr. B. M. Tittsworth, Jefferson County-----		3	00	
March					
1	Dr. T. E. Sawyer, Weakley County-----	\$	6	00	
1	Dr. J. H. Williams, Carroll County-----		24	00	
1	Dr. F. M. Boyatt, Scott County-----		2	00	
3	Dr. J. W. Sanford, Lauderdale County-----		15	00	
	(\$4 Medical Defense)				
3	Dr. Hartwell Weaver, Dickson County-----		2	00	
3	Dr. R. H. Miller, Shelby County-----		38	00	
5	Dr. H. P. Larimore, Hamilton County-----		4	00	

7 Dr. E. M. Fuqua, Davidson County-----\$	16 00	28 Dr. R. H. Miller, Shelby County-----\$	46 00
(\$2, 1916 dues)		28 Dr. J. H. McSwain, Henry County-----	27 00
7 Dr. H. D. Miller, Washington County-----	68 00	(\$3 Medical Defense)	
(\$14 Medical Defense)		28 Dr. W. P. Allen, Rhea County-----	13 00
7 Dr. J. W. Rogers, Sevier County-----	8 00	(\$1 Medical Defense)	
8 Dr. W. G. Saunders, Madison County-----	2 00	28 Dr. H. D. Miller, Washington County-----	3 00
8 Dr. J. W. Sanford, Lauderdale County-----	3 00	(\$1 Medical Defense)	
(\$1 Medical Defense)		29 Dr. Charles Griffith, Coffee County-----	6 00
8 Dr. T. A. Patrick, Lincoln County-----	40 00	(\$2 Medical Defense)	
9 Dr. W. K. Vance, Sullivan County-----	10 00	29 Dr. Hartwell Weaver, Dickson County----	4 00
10 Dr. Samuel T. Parker, Henderson County--	4 00	29 Dr. H. C. Moorman, Fayette County-----	5 00
(\$2 Medical Defense)		(\$1 Medical Defense)	
12 Dr. Robert M. Young, Knox County-----	38 00	29 Dr. W. G. Saunders, Madison County-----	10 00
12 Dr. H. C. Moorman, Fayette County-----	19 00	29 Dr. B. T. Bennett, Gibson County-----	3 00
(\$1 Medical Defense)		(\$1 Medical Defense)	
12 Dr. W. K. Edwards, Hickman County-----	5 00	29 Dr. A. Y. Kirby, Macon County-----	16 00
(\$5 Medical Defense)		(\$2 Medical Defense)	
12 Dr. W. K. Edwards, Hickman County-----	14 00	30 Dr. R. H. Miller, Shelby County-----	28 00
14 Dr. T. M. Roberts, Monroe County-----	3 00	30 Dr. B. M. Little, Montgomery County-----	33 00
(\$1 Medical Defense)		(\$9 Medical Defense)	
15 Dr. E. LeRoy Wilkins, Dyer County-----	19 00	30 Dr. E. W. Cocks, Hardeman County-----	4 00
(\$5 Medical Defense)		31 Dr. John P. Grisard, Franklin County-----	22 00
15 Dr. E. LeRoy Wilkins, Dyer County-----	3 00	31 Dr. Dabney Minor, Bradley County-----	6 00
(\$1 Medical Defense)		31 Dr. Dabney Minor, Bradley County-----	1 00
15 Dr. K. S. Howlett, Williamson County----	3 00	(\$1 Medical Defense)	
(\$1 Medical Defense)		31 Dr. E. M. Fuqua, Davidson County-----	54 00
15 Dr. John R. Parker, Sumner County-----	24 00	31 Dr. M. A. Beasley, Maury County-----	11 00
16 Dr. W. W. Hill, Roane County-----	2 00	(\$1 Medical Defense)	
16 Dr. J. R. Richardson, Blount County-----	6 00	31 Dr. W. P. Allen, Rhea County-----	2 00
(\$2 Medical Defense)		31 Dr. J. W. Sanford, Lauderdale County----	3 00
16 Dr. E. E. Northcutt, Warren County-----	1 00	(\$1 Medical Defense)	
(\$1 Medical Defense)		31 Dr. H. P. Larimore, Hamilton County-----	8 00
19 Dr. V. L. Lewis, Cumberland County-----	8 00	31 Dr. H. D. Miller, Washington County-----	3 00
19 Dr. E. W. Cocks, Hardeman County-----	14 00	(\$1 Medical Defense)	
19 Dr. Dabney Minor, Bradley County-----	12 00	31 Dr. R. L. Hyder (membership dues)-----	2 00
19 Dr. Dabney Minor, Bradley County-----	3 00	31 Dr. W. G. Saunders, Madison County-----	4 00
(\$3 Medical Defense)		31 Dr. R. H. Miller, Shelby County-----	20 00
19 Dr. H. P. Larimore, Hamilton County-----	14 00	31 Dr. J. H. McSwain, Henry County-----	4 00
19 Dr. W. K. Vance, Sullivan County-----	8 00		
20 Dr. R. H. Miller, Shelby County-----	14 00	Total from April 1, 1916, through March	
20 Dr. H. D. Miller, Washington County-----	2 00	31, 1917 -----	\$3,651 50
20 Dr. S. T. Parker, Henderson County-----	2 00		
21 Dr. W. C. Brown, Chester County-----	2 00		
21 Dr. John R. Parker, Sumner County-----	3 00		
(\$1 Medical Defense)			
22 Dr. S. T. Hardison, Marshall County-----	3 00		
(\$1 overpaid)			
22 Dr. R. H. Miller, Shelby County-----	38 00		
22 Dr. H. S. Shoulders, Robertson County----	9 00		
(\$1 Medical Defense)			
23 Dr. B. T. Bennett, Gibson County-----	65 00		
(\$19 Medical Defense)			
23 Dr. O. H. Williams, Hardin County-----	10 00		
(For check of December 30)*			
24 Dr. J. S. Lyons, Hawkins County-----	24 00		
24 Dr. M. A. Blanton, Greene County-----	10 00		
24 Dr. F. M. Boyatt, Scott County-----	3 00		
(\$1 Medical Defense)			
26 Dr. E. C. Freeman, Giles County-----	26 00		
26 Dr. L. J. Lindsey, Tipton County-----	3 00		
(\$1 Medical Defense)			
26 Dr. T. E. Sawyer, Weakley County-----	8 00		
(\$2 Medical Defense)			
26 Dr. C. T. Love, Crockett County-----	2 00		
26 Dr. H. P. Larimore, Hamilton County-----	16 00		
26 Dr. E. LeRoy Wilkins, Dyer County-----	11 00		
(\$1 Medical Defense)			
26 Dr. B. T. Bennett, Gibson County-----	3 00		
(\$1 Medical Defense)			
26 Dr. Charles Griffith, Coffee County-----	15 00		
(\$5 Medical Defense)			
27 Dr. Robert M. Young, Knox County-----	26 00		
27 Dr. J. L. Edwards, Haywood County-----	4 00		

TABLE II.

ADVERTISING CASH.

April, 1916	
8 Watauga Sanitarium -----	\$ 52 56
8 Coöperative Medical Advertising Bureau--	66 71
8 Katherine L. Storm -----	2 50
8 City View Sanitarium -----	7 50
8 Dr. J. R. Storie (subscription)-----	2 00
11 Drs. Lewis & Blue -----	6 00
11 Ambrose Printing Company -----	3 33
11 Southern Ice Company -----	10 00
12 Nashville, Chattanooga and St. Louis Ry.--	15 00
(Returned by bank for indorsement, and so deposited twice)	
12 Seilaz Café -----	12 00
13 Model Steam Laundry -----	10 00
13 Theo. Tafel Company -----	5 00
15 Woman's Hospital -----	5 42
17 Parke, Davis & Co. -----	7 13
17 F. A. Hardy & Co. -----	5 00
17 H. K. Mulford Company -----	9 50
20 Dr. G. C. Horne (subscription)-----	2 00
20 Lynnhurst Sanitarium -----	15 00
20 Fairchild Bros. & Foster -----	7 50
25 Cincinnati Sanitarium -----	5 00
27 Oxford Retreat -----	2 50
28 Drs. Petty & Wallace -----	7 50
May	
3 Katherine L. Storm -----	\$ 2 50
9 Ambrose Printing Company -----	3 33
9 T. E. Burns Company -----	8 00
11 Armour & Co. -----	7 00
11 Dr. H. E. Goetz Sanitarium -----	15 00

*This was a money order for check of December 30. This was also returned by the bank for Dr. Gallagher's indorsement and then repositied; so the same item appears in bank deposits three times.

11 Theo. Tafel Company -----	\$ 5 00	September	
12 Woman's Hospital -----	5 42	9 Vanderbilt University -----	\$ 25 00
12 Southern Ice Company -----	10 00	11 Parke, Davis & Co. -----	7 13
12 Coöperative Medical Advertising Bureau-----	68 48	12 Southern Ice Company -----	10 00
13 Parke, Davis & Co. -----	7 13	12 Ambrose Printing Company -----	3 33
16 F. A. Hardy & Co. -----	5 00	12 Drs. Petty & Wallace -----	7 50
17 Fairchild Bros. & Foster -----	7 50	12 City View Sanitarium -----	7 50
17 Orchard Springs Sanitarium -----	15 00	12 F. A. Hardy & Co. -----	5 00
19 Oxford Retreat -----	2 50	12 Coöperative Medical Advertising Bureau-----	74 00
24 Cincinnati Sanitarium -----	5 00	12 McQuiddy Printing Company -----	5 42
26 H. K. Mulford Company -----	9 50	13 Katherine L. Storm -----	2 50
		13 Nashville Pure Milk Company -----	2 92
June		13 Armour & Co. -----	7 00
3 City View Sanitarium -----	\$ 15 00	14 Dr. Allen H. Bunce -----	5 00
6 Southern Ice Company -----	10 00	14 St. Cecilia Academy -----	4 00
7 Katherine L. Storm -----	2 50	16 Woman's Hospital -----	5 42
8 Theo. Tafel Company -----	5 00	18 Oxford Retreat -----	2 50
9 Dr. J. H. Carter (card space)-----	5 00	27 Cincinnati Sanitarium -----	5 00
9 Coöperative Medical Advertising Bureau-----	73 04	28 Fairchild Bros. & Foster -----	7 50
9 Bradley-Newman Cigar Company -----	12 00	29 Miss Annie Smythe -----	5 42
10 Elizabeth C. Kane (card space)-----	5 00		
10 Max Henning (card space)-----	5 00	October	
10 O. S. McCown (card space)-----	5 00	6 Ward-Belmont -----	\$ 8 00
10 Ambrose Printing Company -----	3 33	6 Theo. Tafel Company -----	10 00
13 Woman's Hospital -----	5 42	6 City View Sanitarium -----	7 50
14 Parke, Davis & Co. -----	7 13	7 Dr. Katherine L. Storm -----	2 50
16 Armour & Co. -----	7 00	10 Coöperative Medical Advertising Bureau-----	71 78
16 Dr. S. T. Rucker (card space)-----	5 00	11 Armour & Co. -----	7 00
19 H. K. Mulford Company -----	9 50	11 Drs. Lewis & Blue -----	6 00
20 L. & N. Railroad (advertising)-----	15 00	12 McQuiddy Printing Company -----	5 42
21 Fairchild Bros. & Foster -----	7 50	12 Ambrose Printing Company -----	3 33
22 F. A. Hardy & Co. -----	5 00	12 Southern Ice Company -----	10 00
26 Oxford Retreat -----	2 50	12 H. K. Mulford & Co. -----	28 50
27 W. G. Bogart (card space)-----	5 00	12 Woman's Hospital -----	5 42
27 Cincinnati Sanitarium -----	5 00	13 Nashville Pure Milk Company -----	2 92
		14 Parke, Davis & Co. -----	7 13
July		17 Allen H. Bunce -----	5 00
3 City View Sanitarium -----	\$ 7 50	17 F. A. Hardy & Co. -----	5 00
5 Theo. Tafel Company -----	5 00	19 Lynnhurst Sanitarium -----	15 00
5 New Orleans Polyclinic -----	15 00	19 Oxford Retreat -----	2 50
7 Southern Ice Company -----	10 00	25 University of Tennessee -----	15 00
7 Chapman Drug Company -----	22 50	26 Fairchild Bros. & Foster -----	7 50
7 Dr. Katherine L. Storm -----	2 50	26 Cincinnati Sanitarium -----	5 00
10 Parke, Davis & Co. -----	7 13	26 Broadway Drug Company -----	5 00
11 Drs. Lewis & Blue -----	6 00	28 Drs. Petty & Wallace -----	7 50
13 Ambrose Printing Company -----	3 33		
14 Coöperative Medical Advertising Bureau-----	70 39	November	
17 Armour & Co. -----	7 00	2 George S. Johnston & Co. -----	\$ 54 15
17 Woman's Hospital -----	5 42	3 City View Sanitarium -----	7 50
17 F. A. Hardy & Co. -----	5 00	6 Katherine L. Storm -----	2 50
20 Fairchild Bros. & Foster -----	7 50	8 Miss Annie Smythe -----	5 42
20 Oxford Retreat -----	2 50	8 Nashville Surgical Supply Company-----	43 36
26 Cincinnati Sanitarium -----	5 00	10 Ambrose Printing Company -----	3 33
27 Haury & Sons -----	8 00	11 McQuiddy Printing Company -----	5 42
		11 Parke, Davis & Co. -----	7 13
August		11 John S. Browne (Journals)-----	2 40
2 Theo. Tafel & Co. -----	\$ 5 00	13 Armour & Co. -----	7 00
2 City View Sanitarium and Nurses (advertising)-----	10 50	15 Southern Ice Company -----	10 00
7 Katherine L. Storm -----	2 50	16 Coöperative Medical Advertising Bureau-----	73 55
9 Lynnhurst Sanitarium -----	15 00	16 Woman's Hospital -----	5 42
10. Coöperative Medical Advertising Bureau-----	74 50	17 F. A. Hardy & Co. -----	5 00
11 Allen H. Bunce -----	5 00	17 Fairchild Bros. & Foster -----	7 50
11 Parke, Davis & Co. -----	7 13	20 Dr. A. Weil (subscription, 1916 and 1917)-----	4 00
11 McQuiddy Printing Company -----	10 84	23 Oxford Retreat -----	2 50
14 Southern Ice Company -----	10 00	27 Cincinnati Sanitarium -----	5 00
14 Oxford Retreat -----	2 50		
14 R. L. Polk & Co. (subscription)-----	2 00	December	
14 Ambrose Printing Company -----	3 33	4 Broadway Drug Company -----	\$ 10 00
15 Woman's Hospital -----	5 42	4 City View Sanitarium -----	7 50
15 Armour & Co. -----	7 00	4 Katherine L. Storm -----	2 50
17 F. A. Hardy Company -----	5 00	9 Ambrose Printing Company -----	3 33
17 Fairchild Bros. & Foster -----	7 50	9 Parke, Davis & Co. -----	7 13
26 Cincinnati Sanitarium -----	5 00	11 Dr. Allen H. Bunce -----	10 00
		12 McQuiddy Printing Company -----	5 42
		12 Nashville Surgical Supply Company -----	5 42
		12 Coöperative Medical Advertising Bureau-----	70 50

13 H. K. Mulford & Co. -----	\$ 19 00
14 Nashville Pure Milk Company -----	5 84
15 Southern Ice Company -----	10 00
16 Oxford Retreat -----	2 50
18 F. A. Hardy & Co. -----	5 00
18 Armour & Co. -----	7 00
23 Fairchild Bros. & Foster -----	7 50
27 Cincinnati Sanitarium -----	5 00
27 Charles W. Bryson -----	11 00
29 Theo. Tafel Company -----	10 00

31 Fairchild Bros. & Foster -----	\$ 7 50	
31 George S. Johnston & Co. -----	86 64	
31 Weder Manufacturing Company (exhibit space) -----	10 00	
Total from April 8, 1916, through March 31, 1917 -----		\$2,661 68

DR. J. F. GALLAGHER, TREASURER.

REPORT FROM CHECK BOOK.

January, 1917

5 Frank & Co. -----	\$ 12 00
8 Armour & Co. -----	7 00
8 Orchard Springs Sanitarium -----	30 00
9 Dr. J. B. Grothaus (advertising) -----	3 00
9 Katherine L. Storm -----	2 50
10 Parke, Davis & Co. -----	7 13
10 Mrs. Sweeney (advertising) -----	5 00
11 McQuiddy Printing Company -----	5 42
11 Nashville Surgical Supply Company -----	5 42
11 Dr. Allen H. Bunce -----	5 00
11 Ambrose Printing Company -----	3 33
12 Nashville Pure Milk Company -----	2 92
15 Fairchild Bros. & Foster -----	7 50
15 Coöperative Medical Advertising Bureau -----	67 46
17 F. A. Hardy & Co. -----	5 00
17 Oxford Retreat -----	2 50
22 Southern Ice Company -----	10 00
22 Lynnhurst Sanitarium -----	15 00
23 Drs. Petty & Wallace -----	7 50
24 Model Steam Laundry -----	26 64
29 Cincinnati Sanitarium -----	5 00

February

1 City View Sanitarium -----	\$ 7 50
9 Southern Ice Company -----	10 00
9 Katherine L. Storm -----	2 50
9 Theo. Tafel Company -----	10 00
9 Dr. R. S. Plumlee (subscription) -----	4 00
12 Coöperative Medical Advertising Bureau -----	79 37
12 Nashville Surgical Supply Company -----	5 42
12 Parke, Davis & Co. -----	7 13
12 Armour & Co. -----	7 00
12 McQuiddy Printing Company -----	5 42
13 Nashville Pure Milk Company -----	2 92
13 Ambrose Printing Company -----	3 33
16 Miss Annie Sanders (Registry of Nurses) -----	5 00
16 F. A. Hardy & Co. -----	5 00
19 Oxford Retreat -----	2 50
19 Dr. Allen H. Bunce -----	5 00
24 Cincinnati Sanitarium -----	5 00
26 H. K. Mulford Company -----	19 00
28 Fairchild Bros. & Foster -----	7 50

March

5 City View Sanitarium -----	\$ 7 50
5 Parke, Davis & Co. -----	7 13
7 Todd & Armistead -----	22 50
9 Armstrong's -----	8 00
9 Eat Shop -----	8 00
10 The Rhame Mercantile Agency -----	5 00
10 Exhibit space for Fairchild Bros. & Foster -----	10 00
10 McQuiddy Printing Company -----	5 42
12 Nashville Surgical Supply Company -----	5 42
12 Southern Ice Company -----	10 00
12 Coöperative Medical Advertising Bureau -----	87 53
12 Ambrose Printing Company -----	3 33
14 Nashville Pure Milk Company -----	2 92
15 Oxford Retreat -----	2 50
16 F. A. Hardy & Co. -----	5 00
19 Dr. Katherine L. Storm -----	2 50
19 H. K. Mulford Company -----	9 50
22 Armour & Co. -----	7 00
26 Cincinnati Sanitarium -----	5 00
27 Dr. Allen H. Bunce -----	5 00

No.

1 Olin West, Secretary, stamps -----	\$ 10 00
2 Dr. S. R. Miller, Medical Defense -----	1 00
3 Dr. S. R. Miller, Medical Defense -----	1 00
4 Dr. S. R. Miller, Medical Defense -----	1 00
5 Dr. S. R. Miller, Medical Defense -----	7 00
6 Cumberland Telephone Company, April service and long distance -----	7 37
7 Miss Mabel Miller, April salary -----	60 00
8 Messrs. Edgington & Smith, reporting pro- ceedings of House of Delegates -----	35 92
9 Dr. S. R. Miller, Medical Defense -----	1 00
10 Dr. Olin West, for Miss Miller's ex- penses to, from, and at Knoxville during the annual meeting -----	32 51
11 Dr. Olin West, telegrams as per order of House of Delegates -----	1 28
12 Dr. S. R. Miller, Medical Defense -----	1 00
13 Dr. S. R. Miller, Medical Defense -----	7 00
14 Dr. C. N. Cowden, two checks cashed after bank book balances transferred—\$5 and \$2 -----	7 00
15 Dr. C. N. Cowden, refund for bank-book expenses by order of House of Delegates -----	5 00
16 Dr. S. R. Miller, Medical Defense -----	4 00
17 Corner Realty Company, May rent -----	18 00
18 Miss Mabel Miller, May salary -----	60 00
19 Dr. Trusler, with A. M. A., for services to Medical Association -----	19 00
20 William Whitford, reporting annual meet- ing and E., E., N. & To. Section -----	241 35
21 Cumberland Telephone Company, May services, long distance, and telegrams during Knoxville meeting, etc. -----	15 84
22 Dr. Olin West, Secretary, stamps -----	5 00
23 Dr. S. R. Miller, Medical Defense -----	1 00
24 Dr. Olin West, Secretary, stamps -----	5 00
25 Dr. S. R. Miller, Medical Defense -----	2 00
26 Dr. Olin West, Secretary, stamps -----	5 00
27 Dr. S. R. Miller, Medical Defense -----	1 00
28 Dr. T. J. Hickman, for overpaid dues on check of \$4 -----	1 00
29 Dr. S. R. Miller, Medical Defense -----	4 00
30 Western Union, for delivery of May Journals -----	90
31 Dr. S. R. Miller, Medical Defense -----	2 00
32 Dr. Olin West, Secretary, stamps -----	5 00
33 Rich Printing Company—program, \$35; cuts, \$4.33; postage, \$7.26; printing Journal, \$290; less advertising space, \$10.84 -----	325 75
34 Dr. S. R. Miller, Medical Defense -----	1 00
35 Miss Mabel Miller, June salary -----	60 00
36 Corner Realty Company, June rent -----	18 00
37 Col. L. G. Archer, commission on \$120 ad- vertisement for Southern Ice Company -----	25 00
38 Dr. S. R. Miller, Medical Defense -----	1 00
39 Dr. F. M. Boyatt, refund fee for Dr. S. S. Foster, of New Mexico, for Medical Defense -----	1 00
40 Cumberland Telephone Company, June services and May toll -----	7 06
41 George C. Dury & Co., rubber stamp for Treasurer -----	53
42 Ambrose Printing Company, letter heads and envelopes and file -----	7 25

43 Southern Ice Company, water bill for three months -----	\$ 3 00	92 Dr. S. R. Miller, Medical Defense-----	\$ 1 00
44 Dr. Olin West, part of 1916 salary-----	100 00	93 Dr. Olin West, part of salary -----	75 00
45 Dr. S. R. Miller, Medical Defense-----	1 00	94 Miss Mabel Miller, November salary-----	60 00
46 Dr. S. R. Miller, Medical Defense-----	1 00	95 Dr. S. R. Miller, Medical Defense-----	1 00
47 Western Union, for delivery of June Journals -----	1 00	96 Corner Realty Company, October rent-----	18 00
48 McQuiddy Printing Company—printing June Journal, \$190; envelopes, \$1.20; half-tones and etchings, \$23.25; postage, \$5.82 -----	220 27	97 Dr. Olin West, Secretary, stamps-----	5 00
49 Dr. Olin West, Secretary, stamps-----	5 00	98 McQuiddy Printing Company—printing October Journal, cuts, etc. -----	211 02
50 Underwood Typewriter Company, ribbon for typewriter -----	75	99 E. M. Bond Storage Company, hauling from Independent Life Building -----	4 00
51 Dr. Olin West, part salary -----	50 00	100 New York Carpet Cleaning Works, for cleaning rugs -----	58
52 Corner Realty Company, July rent-----	18 00	101 Southern Ice Company, September and October bills -----	2 00
53 Miss Mabel Miller, July salary -----	60 00	102 Cumberland Telephone Company, November services -----	6 00
54 Dr. S. R. Miller, Medical Defense-----	2 00	103 George Brown (colored), \$1.75 for work and 25 cents for polish -----	2 00
55 Dr. S. R. Miller, Medical Defense-----	1 00	104 Dr. Olin West, Secretary, stamps-----	5 00
56 Dr. S. R. Miller, Medical Defense-----	1 00	105 Western Union, delivery of November Journals -----	1 00
57 Western Union, delivery of July Journals-----	1 00	106 Dr. S. R. Miller, Medical Defense-----	1 00
58 Dr. Olin West, Secretary, stamps-----	5 00	107 Dr. Olin West, Secretary, stamps-----	5 00
59 Dr. Olin West, part salary -----	75 00	108 Nashville Property Company, November rent -----	24 00
60 Miss Mabel Miller, August salary-----	60 00	109 Wiles, photographer, frame for Dr. Cowden's picture -----	1 00
61 Corner Realty Company, August rent-----	18 00	110 Ambrose Printing Company, yellow sheets, envelopes, etc. -----	5 70
62 B. B. Kirkpatrick, commission on Marinello and Mrs. Smith's advertisements-----	17 50	111 Cumberland Telephone Company, moving telephone, extension, etc. -----	5 65
63 Southern Ice Company, June and July ice bill -----	2 00	112 J. P. Miller, building shelves -----	3 00
64 Cumberland Telephone Company, August services -----	13 98	113 George Brown (colored), cleaning floors and waxing -----	3 00
65 McQuiddy Printing Company—printing July Journal, \$190; half-tones, \$8; postage, \$5.91 -----	203 91	114 Miss Mabel Miller, December salary-----	60 00
66 Herman Handly, commission on Ward-Belmont advertisement -----	2 00	115 Dr. Olin West, on salary -----	150 00
67 B. B. Kirkpatrick, commission on Crutcher-Owens Manufacturing Company and Vanderbilt Medical Department -----	12 50	116 Cumberland Telephone Company, December services -----	4 50
68 B. B. Kirkpatrick, commission on Jungermann & Rust and Nashville Pure Milk advertisements -----	17 50	117 Nashville Property Company, December rent -----	24 00
69 Herman Handly, commission on St. Cecilia advertisement -----	1 00	118 Misses King and Selley, 150 blanks for annual report -----	1 50
70 Dr. Olin West, part salary -----	100 00	119 McQuiddy Printing Company, November Journal, etc. -----	205 83
71 Dr. Olin West, Secretary, stamps-----	5 00	120 Southern Ice Company, November water bill -----	1 25
72 Western Union, delivery of August Journals -----	1 00	121 Cain-Sloan Company, window-curtain goods and clock -----	4 74
73 Canceled -----	----	122 Ambrose Printing Company, one ledger, envelopes, etc. -----	18 75
74 B. B. Kirkpatrick, commissions on advertisements for University of Tennessee, Miss Annie Smythe, and Marinello Shop -----	21 25	123 Dr. S. R. Miller, Medical Defense-----	3 00
75 Jere L. Crook, expenses as delegate to Detroit meeting -----	50 00	124 Dr. Olin West, Secretary, stamps-----	5 00
76 Dr. Olin West, Secretary, stamps-----	5 00	125 Western Union, delivery of December Journals -----	1 00
77 Miss Mabel Miller, September salary-----	60 00	126 Dr. S. R. Miller, Medical Defense-----	7 00
78 Cumberland Telephone Company, September services -----	7 51	127 Dr. John M. Lee, painting floors, door sign, etc. -----	8 94
79 Corner Realty Company, September rent-----	18 00	128 Dr. Olin West, Secretary, stamps-----	5 00
80 McQuiddy Printing Company—August Journal, half-tones, etc. -----	219 17	129 Dr. S. R. Miller, Medical Defense-----	7 00
81 Dr. S. R. Miller, Medical Defense-----	2 00	130 Miss M. Miller, commission on advertisements of Armstrong's and Eat Shop-----	4 00
82 Dr. Olin West, part of salary -----	90 00	131 Dr. S. R. Miller, Medical Defense-----	11 00
83 Western Union, delivery of September Journals -----	1 00	132 Dr. S. R. Miller, Medical Defense-----	2 00
84 Dr. Olin West, Secretary, stamps-----	5 00	133 Dr. Olin West, Secretary, stamps-----	5 00
85 Cumberland Telephone Company, services for October -----	6 32	134 Dr. S. R. Miller, Medical Defense-----	11 00
86 Southern Ice Company, ice bill up to August -----	18 20	135 Dr. S. R. Miller, Medical Defense-----	6 00
87 Southern Ice Company, water bill for two months -----	1 00	136 Nashville Property Company, January rent -----	24 00
88 McQuiddy Printing Company—printing September Journals, \$190; alterations, \$6; etching, \$1; postage, \$5.89 -----	202 89	137 Cumberland Telephone Company, January services -----	4 50
89 Dr. Olin West, Secretary, stamps-----	5 00	138 Ambrose Printing Company, letter heads and envelopes -----	3 75
90 Miss Mabel Miller, October salary-----	60 00	139 Castner-Knott Company, one tabourette and one jardiner -----	1 85
91 Dr. J. F. Gallagher, Treasurer, salary-----	100 00	140 Southern Ice Company, December water bill -----	1 25
		141 Nashville Laundry Company, office laundry for four months -----	1 60
		142 Miss Mabel Miller, January salary-----	60 00

143 Dr. S. R. Miller, Medical Defense.....	\$ 2 00	199 Southern Ice Company—January ice,	
144 Nashville Railway and Light Company,		\$1.35; February ice, \$1.20; January wa-	
light bill for December	1 68	ter bill, \$1; February water bill, \$1.....	4 55
145 Dr. S. R. Miller, Medical Defense.....	4 00	200 Harry J. Frahn, architect—services on	
146 Dr. S. R. Miller, Medical Defense.....	5 00	plan for exhibit, \$5; twelve blue prints,	
147 Dr. S. R. Miller, Medical Defense.....	1 00	50 cents	5 50
148 McQuiddy Printing Company, printing De-		201 Miss Mabel Miller, March salary.....	60 00
cember Journal, postage, etc.	209 92	202 Dr. S. R. Miller, Medical Defense.....	14 00
149 Dr. S. R. Miller, Medical Defense.....	1 00	203 Dr. Olin West, Secretary, stamps.....	5 00
150 Dr. S. R. Miller, Medical Defense.....	8 00	204 Dr. S. R. Miller, Medical Defense.....	1 00
151 Dr. S. R. Miller, Medical Defense.....	17 00	205 Dr. S. R. Miller, Medical Defense.....	5 00
152 Western Union, delivery of January Jour-		206 Dr. S. R. Miller, Medical Defense.....	2 00
nals	1 00	207 Dr. S. R. Miller, Medical Defense.....	1 00
153 Dr. S. R. Miller, Medical Defense.....	9 00	208 Dr. S. R. Miller, Medical Defense.....	5 00
154 Dr. Olin West, Secretary, stamps.....	5 00	209 Dr. S. R. Miller, Medical Defense.....	1 00
155 Dr. S. R. Miller, Medical Defense.....	8 00	210 Dr. Olin West, on salary	100 00
156 Dr. S. R. Miller, Medical Defense.....	8 00	211 Miss Mabel Miller, commission on adver-	
157 Dr. Olin West, part salary	100 00	tisements of D. Loveman, Lyle, Mannie	
158 Dr. S. R. Miller, Medical Defense.....	2 00	Milder, and Jensen, Herzer & Jeck.....	4 00
159 Dr. S. R. Miller, Medical Defense.....	6 00	212 Miss Mabel Miller, commission on Gray-	
160 Dr. S. R. Miller, Medical Defense.....	1 00	Fox advertisement	1 00
161 Dr. S. R. Miller, Medical Defense.....	8 00	213 Dr. S. R. Miller, Medical Defense.....	7 00
162 Dr. Olin West, Secretary, stamps.....	5 00	214 Dr. Olin West, Secretary, stamps.....	5 00
163 Dr. S. R. Miller, Medical Defense.....	1 00	215 Dr. S. R. Miller, Medical Defense.....	2 00
164 Dr. S. R. Miller, Medical Defense.....	4 00	216 Western Union, delivery of March Jour-	
165 Dr. S. R. Miller, Medical Defense.....	3 00	nals	75
166 Dr. S. R. Miller, expenses as delegate to		217 Dr. S. R. Miller, Medical Defense.....	1 00
Detroit (A. M. A.).....	50 00	218 Dr. S. R. Miller, Medical Defense.....	3 00
167 Dr. Olin West, Secretary, stamps.....	5 00	219 Dr. Olin West, Secretary, stamps.....	5 00
168 Dr. S. R. Miller, Medical Defense.....	11 00	220 Dr. S. R. Miller, Medical Defense.....	1 00
169 Ambrose Printing Company, letter heads,		221 Dr. S. T. Hardison, Marshall County, over-	
file, gum patches, etc.	17 50	paid dues	1 00
170 Southern Ice Company, ice for four		222 Dr. S. R. Miller, Medical Defense.....	1 00
months	9 20	223 Dr. S. R. Miller, Medical Defense.....	19 00
171 Cumberland Telephone Company, January		224 Dr. S. R. Miller, Medical Defense.....	1 00
services	5 88	225 Dr. S. R. Miller, Medical Defense.....	5 00
172 Dr. John M. Lee, for part of office fixtures	4 85	226 Dr. S. R. Miller, Medical Defense.....	3 00
173 Nashville Property Company, February		227 Dr. S. R. Miller, Medical Defense.....	2 00
rent	24 00	228 Dr. S. R. Miller, Medical Defense.....	3 00
174 McQuiddy Printing Company—printing		229 Dr. S. R. Miller, Medical Defense.....	1 00
January Journal, \$190; half-tones, \$15;		230 Dr. S. R. Miller, Medical Defense.....	2 00
extra copies, \$11; postage, \$5.84; elec-		231 Dr. S. R. Miller, Medical Defense.....	1 00
trots and alterations, \$2.55	224 99	232 Dr. S. R. Miller, Medical Defense.....	1 00
175 Dr. S. R. Miller Medical Defense.....	4 00	233 Dr. S. R. Miller, Medical Defense.....	1 00
176 Dr. S. R. Miller, Medical Defense.....	6 00	234 Dr. S. R. Miller, Medical Defense.....	2 00
177 Dr. S. R. Miller, Medical Defense.....	2 00	235 Dr. S. R. Miller, Medical Defense.....	9 00
178 Dr. S. R. Miller, Medical Defense.....	15 00	236 Dr. Olin West, stamps	5 00
179 Miss Mabel Miller, February salary.....	60 00	237 McQuiddy Printing Company—printing	
180 Miss Margaret Gerraty, stenographic work		March Journal, \$190; extra copies, \$11;	
for Committee on Public Policy and Leg-		cuts, \$24.80; postage, \$6.41.....	232 21
islation	3 00	238 Ambrose Printing Company—second	
181 Dr. Olin West, Secretary, stamps.....	5 00	sheets, \$1; bands, clips, pens, \$1.45; in-	
182 Dr. S. R. Miller, Medical Defense.....	1 00	dex cards, \$1.75; membership cards, \$5..	9 20
183 Dr. S. R. Miller, Medical Defense.....	20 00	239 Dr. Olin West, balance on salary.....	60 00
184 Dr. S. R. Miller, Medical Defense.....	1 00	240 Dr. S. R. Miller, Medical Defense.....	1 00
185 Western Union, delivery of February		241 Dr. S. R. Miller, Medical Defense.....	1 00
Journals	1 00		
186 Dr. Olin West, Secretary, stamps.....	5 00	Total checks	\$5,825 38
187 Dr. S. R. Miller, Medical Defense.....	5 00	Total checks returned	5,746 38
188 Dr. S. R. Miller, Medical Defense.....	3 00		
189 Dr. Olin West, Secretary, stamps.....	5 00	Outstanding checks	\$ 79 00
190 Dr. Olin West, on salary	100 00	Receipts from advertising, subscriptions, etc....	\$2,661 68
191 Dr. S. R. Miller, Medical Defense.....	3 00	Receipts from membership dues, including	
192 Nashville Property Company, March rent.	24 00	Medical Defense assessments	3,651 50
193 Cumberland Telephone Company, services		Interest on deposits	17 95
for March	4 50		
194 Nashville Railway and Light Company,		Total receipts from all sources	\$6,331 13
bill for March (lights)	1 88	Deduct check entered thrice (returned for in-	
195 Dr. S. R. Miller, Medical Defense.....	4 00	endorsement)	10 00
196 Dr. S. R. Miller, Medical Defense.....	1 00		
197 McQuiddy Printing Company—printing		Balance on hand April 1, 1916.....	\$6,321 13
February Journal, \$190; half-tones,			1,507 76
\$9.05; extra copies, \$11; alterations,			
\$3.65; postage, \$6.40	220 10		
198 Underwood Typewriter Company, one			
black typewriter ribbon	75		\$7,828 89

Total deposits -----	\$7,883 89
Deduct duplicate deposits (returned checks for nonpayment or for indorsement) -----	55 00
Total net deposits -----	\$7,828 89
Canceled checks returned -----	\$5,746 38
Checks outstanding -----	79 00
Total expenditures -----	\$5,825 28
Balance in bank April 2, 1917 -----	\$2,082 51
Less amount outstanding checks -----	79 00
Actual net balance -----	\$2,003 51

J. F. GALLAGHER,
Treasurer.

April 5, 1917.

After careful examination of receipts and disbursements, we find the above report to be correct.

J. M. CLACK, Chairman;
W. T. BLACK,
M. B. MURFEE,
Auditing Committee.

April 9, 1917.

DANGER OF FLY POISONS.

In October, 1914, and February, 1916, we published a cursory statistical report that revealed the number of cases where children had been poisoned from arsenical fly destroyers. We again present a table showing cases reported in the press and collected through the agency of a press clipping bureau this last year:

1916	Total	Fatal	Recov. Doubt.	Recov. Indicat.
March -----	1	--	1	--
June -----	1	--	--	1
July -----	11	5	1	5
August -----	16	3	1	12
September ----	3	2	--	1
October -----	4	2	--	2
	36	12	3	21

The cases occurred in the following states:

California -----	1	
Illinois -----	9	3 fatal
Indiana -----	1	
Iowa -----	3	
Michigan -----	1	
Minnesota -----	5	2 fatal
Montana -----	1	1 fatal
Missouri -----	2	1 fatal
North Dakota -----	2	2 fatal
Nebraska -----	3	1 fatal
Pensylvania -----	4	1 fatal
South Dakota -----	1	
Vermont -----	1	
Wisconsin -----	2	1 fatal

It is interesting to note that nine of these cases, with three fatalities, occurred in Illinois and only

one case in Michigan. A bill introduced in the Illinois Legislature to prohibit the sale of poisonous fly papers was *defeated*. A similar bill was *passed* by the Michigan Legislature. Illinois paid as tribute for the neglect of her legislators to safeguard children three infant lives and the suffering of six others. This example is a forceful one, in our opinion, and is self-pleading for the abolition of this peril.

The United States Public-Health Service has taken cognizance of the dangers of poisonous fly papers. The following is extracted from Supplement No. 29 of the Public-Health Reports:

“Of other fly poisons, mention should be made merely for the purpose of condemnation of those composed of arsenic. Fatal cases of the poisoning of children through the use of such compounds are far too frequent; and, owing to the resemblance of arsenical poisoning to summer diarrhoea and cholera infantum, it is believed that the cases reported do not by any means comprise the total. Arsenical fly-destroying devices must, therefore, be rated as extremely dangerous, and should never be used, even if other measures are not at hand.”

There seems to be no sufficient reason for permitting the unrestricted sale of arsenical fly destroyers, and it would be well if other states followed the lead of Michigan in this and regulated their sale. On request we will be pleased to send to any one interested a copy of the Michigan law.

The profession must need actively to exercise its educational influence to abolish this evil.

THE SEARCH FOR THE IDEAL ANTISEPTIC.

R. A. Lambert has followed the effect of the same chemical agent on bacteria and tissue cells growing together in vitro. He finds that the growth of tissue cells is more easily affected by potassium cyanide, phenol, tricresol, hydrogen peroxide, and alcohol than was the growth of bacteria. Iodin stands out as the one chemical tested to which tissue cells were found more resistant than were staphylococci. A good growth of cells was seen after exposure to a 1-in-2,000 solution of iodine for an hour—a strength sufficient to sterilize the tissue completely in most instances. Lambert points out that the power of iodine to dissolve fibrin may be an objection to its use as an antiseptic wound dressing.—Journal of American Medical Association, January 6, 1917, page 40.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn

MAY, 1917

EDITORIALS**FIVE HUNDRED DOCTORS FROM
TENNESSEE.**

Our country is at war because the country believes that the cause of humanity demands that a great nation like ours should no longer stand by inactive. The country has declared its position, and there is nothing left to discuss nor to debate—no “whys,” “ifs,” and “ands.” It is now simply a question of what each man can do to support his country in the stand that has been taken.

The service rendered by the medical profession in times of peace is absolutely necessary to the public welfare. The service which only the medical profession can render in time of war is even more necessary to the national welfare, in the homes of the land, in the ships on the seas, in the camps of the fighters on land and on the front of the fighting line.

There is no doctor who is not helpless because of physical disability who cannot render some valuable service in this time of trouble. Not every one can go to the front, nor should any be sent to the front who cannot be used to positive advantage there. Not every one can stay at home, nor should any be permitted to stay at home who can give better service at the front. At home or in the field, every doctor worthy the name is going to be called upon to make some sacrifice; and most of them are going to make sacrifices, whether asked to do so or not, because it is a part of the doctor's life and a part of his religion to sacrifice himself and his goods for the sake of humanity.

Those who are in position to know say that Tennessee's quota of men for the medical service in the war, based upon our population and upon what other states have done or are going to do, is five hundred doctors. Not nearly half of this

number have offered for service. The Tennessee State Medical Association, of its own accord, notified President Wilson and the War Department that its members stood ready to answer the call. The call has come. It is now time for the individual members of the association to take such action as will see the pledge of service redeemed.

**RETURN YOUR CORRECTED
“DISCUSSIONS.”**

If you discussed a paper at the Nashville meeting, a copy of the official stenographer's notes has been sent you for correction. It is highly important that corrections should be made and that your discussions should be returned to the Journal office as soon as possible. If you fail in this, your remarks will be printed just as the stenographer has them. Please send in your corrected discussions.

**ON COMPULSORY HEALTH
INSURANCE.**

Every member of the Tennessee State Medical Association should make it his business to inform himself as thoroughly as possible upon the subject of compulsory health insurance. This is a many-sided question, and one who studies it should consult all available sources of information. The American Medical Association, the New York State Medical Association and some other state medical organizations, and the American Federation of Labor have all published reports of their duly appointed committees or commissions which have made intensive studies of health insurance. Dr. B. S. Warren, United States Public-Health Service, has devoted years to the subject, and his exhaustive considerations have been published in the Reports of the Service.

Dr. Frederick L. Hoffman, statistician of the Prudential Insurance Company of America, has recently published an address—“Facts and Fallacies of Compulsory Health Insurance”—delivered before the National Civic Federation on January 22, 1917. If one wishes to look well into the subject, Dr. Hoffman's address should be included in the study. It is a most powerful presentation of the subject from Dr. Hoffman's standpoint—one which must be considered by

everybody concerned. The address may be secured in pamphlet form from the Prudential Insurance Company, Newark, N. J.

INFORMATION RELATING TO APPOINTMENTS IN THE MEDICAL RESERVE CORPS SECTION OF THE OFFICERS' RESERVE CORPS OF THE ARMY.

Under the new regulations for the examination of candidates for appointment in the Medical Reserve Corps Section of the Officers' Reserve Corps of the Army, the candidate is required (1) to submit his application in writing to the Surgeon General of the Army; (2) the application should be accompanied by two testimonials; and (3) the personal-history blank, properly filled in as directed thereon, after having the same certified to before a Notary Public.

The requirements for appointment are that the applicant be a citizen of the United States, between twenty-two and fifty-five years of age, a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, and he must have qualified to practice medicine in the state in which he resides and be in the active practice of his profession.

The examination is physical and professional, the professional examination to be oral, except in case of failure, when it will be written. Such written examination will be in the following subjects:

1. Practice of medicine, including etiology, clinical description, pathology, and treatment of diseases.
2. Surgery—principles and practice.
3. Obstetrics and gynecology.
4. Hygiene—personal and general, especially as to the prophylaxis of the more prevalent epidemic diseases.

Specialists will be examined in their specialty.

Commissions are issued for a period of five years, at the end of which time officers may be recommissioned in the same or higher grades—that is, first lieutenant, captain, and major.

The Act of June 3, 1916, creating the Medical Reserve Corps Section of the Officers' Reserve Corps of the Army, provides that in time of peace only those of the grade of first lieutenant may be ordered to active duty, and this with their own consent; but in time of war the services of officers of all grades are at the disposal of the government.

The above information is official and is presented for the guidance of our readers. Dr. Lucius E. Burch, Eve Building, Nashville, Major in the M. R. C., has been delegated by the War Department to conduct examinations of applicants for admission into the Reserve Corps.

The well that drains the cesspool is the cup of death.

COUNTY CHAIRMEN OF COMMITTEES ON MEDICAL PREPAREDNESS.

The following physicians have been asked to serve as chairmen of county committees, to be known as "Auxiliary Medical Defense Committee of — County, Tenn." Most of them have advised Dr. W. D. Haggard, chairman of the State Committee, that the service has been accepted.

West Tennessee.—Tipton County, Dr. N. R. Newman, Covington; Lauderdale County, Dr. Joe Lackey, Ripley; Dyer County, Dr. N. F. Walker, Dyersburg; Lake County, Dr. R. W. Griffin, Tiptonville; Obion County, Dr. Marvin Blanton, Union City; Henry County, Dr. J. H. McSwain, Paris; Gibson County, Dr. W. C. McRee, Trenton; Carroll County, Dr. J. H. McCall, Huntingdon; Benton County, Dr. J. T. Freeman, Big Sandy; Crockett County, Dr. E. S. Hopper, Alamo; Haywood County, Dr. A. H. Sorrelle, Brownsville; Madison County, Dr. Jere L. Crook, Jackson; Henderson County, Dr. Fred C. Watson, Lexington; Decatur County, Dr. J. L. McMillan, Decaturville; McNairy County, Dr. Ernest Smith, Bethel Springs; Hardeman County, Dr. E. W. Cocke, Bolivar; Chester County, Dr. N. B. Marsh, Henderson; Fayette County, Dr. J. W. Morris, Somerville; Hardin County, Dr. O. H. Williams, Savannah; Shelby County, Dr. Battle Malone, Memphis.

East Tennessee.—Knox County, Dr. S. R. Miller, Knoxville; Sullivan-Johnson-Carter Counties, Dr. W. K. Vance, Bristol; Washington County, Dr. H. D. Miller, Johnson City; Campbell County, Dr. R. L. Gallagher, Caryville; Anderson County, Dr. S. B. Hall, Clinton; Roane County, Dr. G. P. Zirkle, Kingston; Blount County, Dr. J. A. McCulloch, Maryville; Hawkins County, Dr. W. K. Armstrong, Rogersville; Greene County, Dr. C. P. Fox, Greeneville; Grainger County, Dr. G. D. LeQuire, Rutledge; Bradley County, Dr. R. P. Sullivan, Cleveland; James County, Dr. O. B. Hughes, Ooltewah; Cumberland County, Dr. V. L. Lewis, Crossville; Marion County, Dr. J. L. Raulston, Richards City; Bledsoe County, Dr. D. A. Greer, Pikeville; Polk County, Dr. F. O. Geisler, Isabella; Rhea County, Dr. R. C. Miller, Evensville; Meigs County, Dr. N. A. Arrants, Decatur; Sequatchie County, Dr. J. A. Lamb, Dunlap; Monroe County, Dr. W. A. McLain, Sweetwater.

Middle Tennessee.—Robertson County, Dr. H. S. Shoulders, Springfield; Cheatham County, Dr. C. B. Lenox, Ashland City; Montgomery County, Dr. Brice Runyon, Clarksville; Stewart County, Dr. H. L. Morrison, Dover; Houston County, Dr. A. H. Abernathy, Erin; Perry County, Dr. Watt Yeiser, Linden; Wayne County, Dr. Frank Norman, Waynesboro; Lawrence County, Dr. T. J. Stoddard, Lawrenceburg; Lewis County, Dr. G. N. Springer, Hohenwald; Hickman County, Dr. J. S. Beasley, Centerville; Dickson County, Dr. J. W. Sugg, Dickson; Williamson County, Dr. Sam White, Franklin; Maury County, Dr. O. J. Porter, Columbia; Giles County, Dr. J. K. Blackburn, Pulaski; Lincoln County, Dr. J. P. Farrar, R. F. D., Fayetteville; Marshall County, Dr. S. T. Hardison, Lewisburg; Bedford County, Dr. T. J. Coble, Shelbyville; Rutherford County, Dr. E. M. Holmes, Murfreesboro; Wilson County, Dr. B. S. Rhea, Lebanon; Sumner County, Dr. W. N. Lackey, Gallatin; Macon County, Dr. M. H. Allen, Lafayette; Trousdale County, Dr. A. G. Donoho, Hartsville; Smith County, Dr. B. J. High, Elmwood; Cannon County, Dr. J. F. Adams, Bradyville; Coffee County, Dr. Horace Farrar, Hillsboro; Franklin County, Dr. F. M. Kirby-Smith, Sewanee; Clay County, Dr. Culom Sidwell, Celina; Jackson County, Dr. C. E. Reeves, Gainesboro; DeKalb County, Dr. W. Byron Parker, Smithville; Warren County, Dr. A. B. Ramsey, McMinnville; Putnam County, Dr. J. T. Moore, Algood; Overton County, Dr. W. M. Breeding, Livingston; Pickett County, Dr. W. C. Groce, Byrdstown; White County, Dr. E. B. Clarke, Sparta.

DEATHS.

Dr. R. W. King, aged sixty-eight years, died at his home at Gordonsville on April 2, 1917. Dr. King was an active member of the Smith County Medical Society and the Tennessee State Medical Association up to the time of his death.

Dr. Z. M. Young, formerly a citizen of Gainesboro, died at his home at Lafayette on January 6, 1917, aged seventy-seven years. Dr. Young was an honorary member of the Jackson County Medical Society, in which he was an active member until the time of his removal a few years ago

to Lafayette. He is survived by his wife and three daughters, one of whom is the wife of Dr. C. E. Reeves, of Gainesboro.

OBION COUNTY.

The biggest and most enjoyable meeting we have had for some time took place in Troy on the afternoon of April 10. Fifteen members were present and discussed heartily the three papers read by Dr. Baird, of Dyersburg; Dr. Darnall, of Obion; and Dr. Smith, of Pierce. One new member was elected and three others paid up.

J. D. CARLTON,
Secretary.

NATIONAL BOARD OF MEDICAL EXAMINERS.

The following announcement of the second examination of the National Board of Medical Examiners should be of interest to our readers. There are good reasons for believing that the usefulness of this new examining board will be widely extended in the near future, since it is quite probable that a number of states will recognize its certificates.

To the Editor of the Journal of the Tennessee State Medical Association.

DEAR SIR: The second examination to be given by the National Board of Medical Examiners will be held in Washington, D. C., June 13, 1917. The examination will last about one week.

The following states will recognize the certificate of the National Board: Colorado, Delaware, Idaho, Iowa, Kentucky, Maryland, North Carolina, New Hampshire, North Dakota, and Pennsylvania. Favorable legislation is now pending in twelve of the remaining states.

A successful applicant may enter the Reserve Corps of either the army or navy without further professional examination, if their examination papers are satisfactory to a board of examiners of these services.

The certificate of the National Board will be accepted as qualification for admittance into the Graduate School of the University of Minnesota, including the Mayo Foundation.

Application blanks and further information may be obtained from the Secretary, Dr. J. S. Rodman, 2106 Walnut Street, Philadelphia.

We will appreciate a notice of this coming examination in your Journal. Very truly yours,

J. S. RODMAN, *Secretary.*

Intelligent motherhood conserves the nation's best crop.

NOTES AND COMMENTS

Seven Jackson doctors have offered for service in the Medical Reserve Corps.

If your Journal fails to reach you this month, you might see your County Secretary and pay your dues.

Application blanks printed in the Journal of the A. M. A. may be used by those who wish to offer for the M. R. C.

The National Wholesale Liquor Dealers' Association is bombarding the world with literature, but the prohibition procession seems to be moving along, nevertheless.

We offer one Irish potato—a prize of great value—to the man who will say that he has ever seen a man who will say that he said what an official stenographer said he said when he said it.

Dr. Lucius E. Burch—now Maj. Lucius E. Burch, M. R. C., U. S. A.—has been detailed for service in Tennessee, and will examine physicians who wish to enter the Medical Reserve Corps.

With sugar at eleven cents, potatoes by the pound instead of by the bushel, bacon at forty cents, and other things in proportion, it is remarkable how a fellow's appetite comes to be abnormally large.

The season is here when the little babies sicken and die. Too many of them die unnecessarily, and a surprisingly large number of them are allowed to die without having had the benefit of medical attendance.

Have you observed the fellow who likes to appear as the only original old he-horse in his community and who wants everybody else to be mealy-mouthed and subdued about everything?

He's the same fellow who jumps into the center of the stage—whether he's in the cast or not—when the spot light is working. When there's nothing out of the ordinary going on, he will always be found absent.

Madison County has seven physicians who have volunteered for service, having sent in their applications for commissions in the Reserve Corps. This is a splendid record—unsurpassed in the state, in so far as we are advised.

Dr. Perry Bromberg, Nashville, was elected a member of the Executive Committee of the American Urological Association at the recent Chicago meeting. Dr. Bromberg was chosen to represent the South-Central section in this national society.

What are you going to do for your brother physician who answers the call to the colors? His pay will be meager; his sacrifice will be great; and when he comes home, if he does come, his practice will be gone, unless you will help to *hold it together for him*.

A young man who will have had two years' study in one of our medical schools at the end of the present term, the son of one of the best-loved doctors in Middle Tennessee, and from one of the most cultured homes in the land, wants a position during the summer vacation. The young man is worthy, intelligent, industrious. Do you know where he can get work? If so, please write the Journal.

ACETYLSALICYLIC ACID, NOT ASPIRIN.

While Aspirin-Bayer has been omitted from New and Nonofficial Remedies, the product is retained under its scientific name, "acetylsalicylic acid," and standards are provided to insure the reliability of the market product. The Aspirin patent expired in February, 1917; and after that time other manufacturers may make and sell the product. One firm's brand—that of the Powers-Weightman-Rosengarten Company—has been accepted for New and Nonofficial Remedies, 1917. Hereafter physicians, when prescribing the compound, should use the scientific name, "acetylsalicylic acid."—Journal of American Medical Association, January 30, 1917, page 301.

Pneumonia kills over 120,000 Americans each year.

BOOK REVIEWS.

MENTAL AND NERVOUS DISEASES. Volume X. Edited by Hugh T. Patrick, M.D., and Peter Bassoe, M.D., Yearbook Publishers, Chicago.

This volume of the Practical Medical Series is fully up to the standard heretofore established, the editorial work of Drs. Patrick and Bassoe having been done with the same fine judgment and discrimination which has marked their previous efforts along the same lines. A great mass of literature has been well covered in this volume.

INTERNATIONAL CLINICS. Volume I. Twenty-seventh Series. J. B. Lippincott Company, Philadelphia. \$2.

Under the general headings, "Treatment," "Medicine," "Dermatology," "Psychiatry," "Public Health," and "Surgery," this volume of the International Clinics contains fifteen articles from American and European contributors. All of these are of timely interest, and several are of especial worth. More than 100 pages are given to a comprehensive review of the 1916 literature by Drs. Frank A. Craig and John Speese.

THE MEDICAL CLINICS OF CHICAGO. Volume II, No. 5. March, 1917. W. B. Saunders Company, Philadelphia.

Anaphylaxis, by Dr. Frederick Tice; Pyelitis (in infancy and childhood), by Dr. J. A. Abt; Pericarditis, by Dr. Charles S. Williamson; Fulguration Treatment of Bladder Papellomata, by Dr. H. L. Kretschmer; Paralysis Agitans, by Dr. R. C. Hamill; Chlorosis, by Dr. A. F. Beifeld; Oral Foci of Infection—Systemic Diseases, by Dr. H. H. Schumann; Inanition in the Treatment of Diabetes, by Dr. Solomon Strouse; Bacillus *Ærogenes* Infection of Intestines, Aneurysm of Aorta, by Dr. C. L. Mix; Two-Hour Renal Test, by Dr. Frank Wright; Retroperitoneal Sarcoma, by Dr. Frank Smithies; The Treatment of Gonorrhœal Urethritis, Anterior and Posterior, by Dr. B. C. Corbus; The Diagnosis and Treatment of Chronic Constipation, by Dr. Joseph C. Friedman.

OBSTETRICS, NORMAL AND OPERATIVE. By George Peaslee Shears, M.D., Professor of Obstetrics in New York Polyclinic Medical School. Pages, 734, with 419 illustrations. J. B. Lippincott Company, Philadelphia.

Dr. Shears' book is not so large as the usual text on obstetrics, containing as it does only such matter as he, with his ripe experience, considers relevant. The general run of books on this subject waste a lot of space and ink on monstrosities. Shears saves this by cutting out this stuff and treats of the monsters in the right place—namely, in considering labor complicated by unusual conditions. The holdings of the author with reference to all phases of the general subject are stated positively and clearly, some of them being decidedly at

variance with most of the noted obstetricians of the day. A feature is the recapitulation of important points at the end of many of the chapters. Taken altogether, this work is a most worthy volume and will serve to keep alive the memory of the man who made it.

NEW AND NONOFFICIAL REMEDIES, 1917, containing descriptions of the articles which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association prior to January 1, 1917. Cloth. Price, postpaid, \$1. Pages, 412 + xxiv. Chicago: American Medical Association, 1917.

This book lists and describes the nonsecret proprietary remedies that have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. It also describes the newer nonproprietary remedies which give promise of some real value that have been accepted by the council. Each description includes the chief facts physicians desire to know concerning composition, dosage, indications, cautions to be observed, etc. The book also contains general articles which compare the value of the proprietary remedies with the established drugs they are intended to supplant. Every member of the Tennessee State Medical Association should have a copy of this book on his desk.

CONSTIPATION, OBSTIPATION, AND INTESTINAL STASIS. By S. G. Gant, M.D., Professor in New York Postgraduate Medical School. W. B. Saunders Company, Philadelphia, 1916. Cloth, \$6.

This is the second edition of Dr. Gant's very valuable work, and should be of interest to both internist and surgeon, taking up, as it does, all features of the subjects treated—mechanical, medical, and surgical. The chapter on educational and prophylactic treatment of constipation should be read in every home, while those on psychic, dietetic, exercise, hydrotherapeutic, and massage treatments can be studied with profit by every doctor. These well-written chapters are based on Dr. Gant's personal experience. He takes up and discusses the etiology and diagnosis of diseases of the gastrointestinal tract in a most thorough manner; and if his advice were followed and his methods of treatment instituted by the profession in their daily work, we would have fewer walking drug stores abroad in the land.

D. R. P.

DOCTOR:

This is your Journal. If you do not give it proper support by patronizing those whose ads. appear in its columns, it is your fault if the Journal does not carry the amount of advertising that it should be carrying. Kindly remember this fact.

THE SECRETARY

EMETINE IN DYSENTERY AND PYORRHEA.

Emetine is accepted to-day as an almost ideal specific against amebic dysentery. Experience indicates that by its use abscess of the liver can be prevented, and even cured. When a differential diagnosis between amebic and bacillary dysentery cannot be made, emetine may be of diagnostic value, because improvement follows from its use if the case is amebic. In neglected cases and some other forms of the disease the emetine treatment may fail of complete success. As a direct cure for pyorrhœa, emetine seems to have failed—not because it does not act on the ameba which are found in the pyorrhœal pockets but because pyorrhœa is not caused by ameba.—*Journal of American Medical Association*, February 3, 1917, page 374.

“The Relation of the Nonprotein Nitrogen to the Urea Nitrogen of the Blood.” By Herman O. Mosenthal and Alma Miller. (From the Medical Clinic of the Johns Hopkins Hospital.)

This study attempts to interpret the significance of the percentage of the urea nitrogen to the total nonprotein nitrogen in the blood in a series of 165 cases. It was found that the percentage of urea nitrogen exhibited a tendency to increase, whether the total nonprotein nitrogen were high or low, in all the diseases considered. Cases with acute renal conditions show a high percentage of the total nonprotein nitrogen as urea nitrogen of the blood, which returns to normal as convalescence occurs. Individual patients, whose clinical condition does not vary appreciably, exhibit a constant percentage of urea nitrogen, whether the total nonprotein nitrogen persists regardless of whether nitrogen is being retained or lost by the body. The conclusion is drawn that the body usually metabolizes protein in such a manner that approximately 80 per cent of the nitrogen set free in the blood is in the form of urea. The selective action of the kidney maintains the urea nitrogen at a level of 50 per cent or less of the total nonprotein nitrogen of the blood. An impairment of renal function, even of very slight degree, may result in an increase of the percentage of urea nitrogen. From the clinical point of view, figures for urea nitrogen are preferable to those for total nonprotein

nitrogen, because (a) the method for urea nitrogen of the blood is simpler; (b) the methods for urea nitrogen are perfected so that they yield constant results, which are comparable to those of other observers, while this is not true of the various means of determining the total nonprotein nitrogen of the blood.—*The Journal of Urology*.

THE PHENOLSULPHONEPHTHALEIN TEST.

It has been assumed that excretion of less than sixty to eighty per cent of phenolsulphonephthalein in two hours is an indication of renal insufficiency. It has been found, however, that in certain experimental conditions phenolsulphonephthalein may be destroyed in the body, and, therefore, not appear in the urine, although the kidneys function normally. If this condition is found to occur in clinical cases, the interpretation of the tests may have to be limited to this: An excretion of sixty to eighty per cent—i. e., a positive result—within two hours after the injection of the phenolsulphonephthalein is evidence of satisfactory renal activity.—*Journal of American Medical Association*, February 3, 1917, page 379.

“Advantage of Pyelotomy Drainage for Nephrotomy Wounds.” By E. L. Keyes, Jr.

Pyelotomy and nephrotomy wounds heal promptly, as a rule, providing there is no obstruction in the ureter below or in the lower urinary tract. Occasionally, however, operative wounds of the renal parenchyma close with extreme slowness, although there may be no demonstrable obstruction to the outflow of urine. It has been the author's experience, however, that incisions made into the renal pelvis are followed uniformly by prompt closure. He believes that the tardy closure of nephrotomy wounds may often be due to the blocking of the upper ureter by blood and pus. The prompt healing of pyelotomy wounds has led the author to adopt this procedure wherever possible but where a nephrotomy is necessary, he recommends suture of the incision in the parenchyma and drainage through a counter incision made in the renal pelvis. He has carried out this plan in three cases with satisfactory results.—*The Journal of Urology*.

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NUMBER 2

SYPHILIS AND INTERNAL MEDICINE.*

By James S. McLester, M.D.,
Professor of Medicine, The Graduate School
of Medicine of the University of
Alabama, Birmingham.

Syphilis is a disease which, for the insidiousness of its ravages and the tenacity of its hold upon innocent and guilty alike has no equal. Proteus would hide his diminished head to see the various forms in which it may appear.

I wish to tell of certain clinical experiences of my own, but no discussion of the part played by syphilis in internal diseases would be complete without some mention first of certain recently published statistics.

Frequency.

Witness first the reports from two widely distant sources—distant socially as well as geographically. McNeill has studied the incidence of syphilis among the negroes of Galveston, and has found that, of the adults applying to the clinic for treatment, 34% had syphilis, as indicated by the Wassermann reaction. Among this number were 200 patients with surgical injuries, of whom 24% had syphilis. Studies upon negro children inclined him to the view that very little of this was inherited. He concluded that among the adult negro population 25% to 30% have syphilis and that of sick negroes 40% to 50% are infected.

Taking an opposite geographic social extreme, we are all familiar with the brilliant studies of the pathology and epidemiology of syphilis by Warthin. By securing very fresh tissue and using the staining method of Levaditi he has been able to demonstrate the presence of active syphilis in one-third of the adult bodies coming to necropsy at the University of Michigan from 1912 to 1914. We wonder why others haven't found the same thing. The fact that the tissue should be fixed while quite fresh (best while still warm) and that infinite patience is sometimes required in searching for spirochetes, explains, no doubt, his success. The muscle of one heart was examined for six weeks before the expected group of spirochetes was found.

At the Hillman Hospital in Birmingham our pathological material, unfortunately, has not been examined with a thoroughness which would warrant definite conclusions; but our serologic studies are fairly complete. The Hillman is the county hospital, and only the poorest patients are found in its wards. Treatment in a charity hospital in the South is, as you know, sought by a lower class than in the North, and less often for trivial illness. The Wassermann reaction in selected medical cases indicated a surprising prevalence of syphilis, and, for more accurate observation, this reaction has for a short time been done as a routine measure upon all hospital patients. This group comprises to date 320 cases, a little more than half of which were negroes. The incidence of syphilis here as indicated by the Wassermann reaction is slightly in excess of 50%. It is recognized that this number is too small to warrant ac-

*Read by invitation before the Tennessee State Medical Association, in Nashville, April 4, 1917.

curate conclusions, but when this group is taken together with our older and much larger number of selected cases, one must admit that the figures indicate with a fair degree of accuracy the part played by syphilis in producing sickness among this class of patients.

To view the subject now from another angle—and it is this aspect that I particularly wish to show you: My own private patients offer evidence from the opposite end of the social scale, and seen only in consulting practice, they may be said to present, in the main, difficult or obscure diseases. We are doing the Wassermann test in a routine manner upon all of these patients.

To anticipate the ever essential question as to the technique of the Wassermann tests of this report, I had best say that these were all done by Miss Blanche Frazier, whose training has been thorough and long, and that no effort in the interest of accuracy, however painstaking or elaborate in detail, has been spared. The original Wassermann technique, done in half quantities, was employed, using as antigens alcoholic extracts of both human and beef heart, and an anti-sheep hemolytic system, adding two full units of complement to all tests, together with preliminary ice-box incubation for four hours at 8°C and final water bath incubation for one-half hour at 37°C.

Of 567 consecutive private patients, 94, or 16.5% gave a positive Wasserman reaction. In addition, seven others with a negative Wasserman reaction gave unmistakable clinical evidence of syphilis, thus bringing the percentage to 17.8. This, I assume, furnishes a fair estimate of the frequency of syphilis in the better class of patients who suffer with the more obscure or serious medical syndrome.

There are no statistics at hand to indicate the frequency of syphilis among apparently healthy white people, but we can by combining the Galveston statistics with our Birmingham experience and the reports of others, find sufficient data to warrant the statement that among the sick negroes and poorer whites in our hospitals approximately half have syphilis, and that among the upper

classes syphilis plays a leading role—to the extent of 17% or more—in influencing the more obscure and serious disease processes of internal medicine.

But what of the specific roles played by the treponema in producing disease of the various internal organs?

Myocardial and Arterial Disease.

The heart and aorta are entitled to first place. Our conception of heart disease is different today from that of ten years ago. Now the integrity and efficiency of the myocardium—not of the valves—is the all-important factor, and we have learned to class diseased hearts according to etiology, not according to anatomical change. Warthin was able to find the spirochete in the muscle of a large proportion of the hearts examined, and from such anatomical studies he reached the conclusion that syphilis is the most frequent cause of heart disease, more frequent, in fact, than all the other causes combined; and that the spirochete is found more often in the heart muscle than in any other tissue.

Read again Longcope's studies of aortitis and note how syphilis is the etiologic factor in 90 to 95% of cases. We have long recognized the role of the spirochete in the production of aortic aneurysm, and it has remained for the X-ray to demonstrate the great frequency of aortic disease. Time and again the fluoroscope reveals an unsuspected aortic dilatation.

Of thirty patients in my private series, who presented essential myocardial disease, fourteen, or 45%, gave a positive Wassermann reaction. In addition there were five aortic aneurysms, in four of which the Wassermann reaction was positive.

In another group are classed our patients with arterial hypertension, a rather heterogeneous lot, for it includes both those with and without demonstrable arterio-sclerosis or obvious kidney disease. It omits aneurysm cases and those reported above in the myocardial group. These hypertension cases numbered sixty-five, and fifteen, or 23%, gave a positive Wassermann reaction.

Neurasthenia.

I have on another occasion reported the

frequency, as I have found it, of syphilis among so-called neurasthenics. I shall not attempt to defend this diagnosis except to say that while we place in this group of emotionally unbalanced individuals, numerous unfortunates whose disabilities rest upon the widest variety of unrelated causes, the group as a whole, nevertheless, forms a familiar and rather clearly defined clinical entity.

In this series were sixty-one neurasthenics, and twenty of these, or 32%, gave a positive Wassermann reaction. Examination of the spinal fluid suggested paresis in one, but in no others, and yet the others with syphilis may, all of them, be regarded as potential paralytics. Such experience with the routine application of the Wassermann reaction convinces me that syphilis is a very frequent cause of the well known clinical picture which we label "Neurasthenia."

Organic Nervous Disease.

Syphilis as a cause of paresis, tabes, and other diseases of the central nervous system, because of its familiarity, deserves only passing mention. One question seems pertinent—is the tenacity with which the spirochete maintains its hold, once secured, upon the brain and spinal cord, a thing peculiar to the central nervous system? I doubt it, for the recent demonstration of herds of spirochetes in the various organs of so many clinically "cured" cases arouses the suspicion that perhaps, after all, the nervous system in its relation to syphilis is peculiar only in respect to the promptness and certainty with which its injuries are manifested, and that other organs offer the spirochete a hospitality of like degree.

The nervous system no doubt becomes infected in a much larger proportion of cases than we ordinarily think, and much earlier. There is good reason for believing that such an invasion not infrequently occurs within the first few months (or weeks) after infection, though fortunately few of these patients are to become victims of typical organic nervous disease.

Certain it is examination of the cerebro-

spinal fluid should be more of a routine (especially in questionable Wassermann negative cases), and no patient who has been infected with syphilis should be discharged without a final examination of this fluid.

Diabetes.

I have been surprised at the frequency with which our diabetics have manifested evidence of syphilis, four among ten patients. The reason becomes evident when one learns with what constancy the spirochete is found in the pancreas of infected bodies. Regarding the heart and aorta as one organ, Warthin ranks the pancreas as second in point of frequency of infection in the female, and third in the male (the testicle being second in the male).

Gastric and Duodenal Ulcers.

Syphilis of the stomach and of the lung are believed to be clinical rarities, and yet the increasing number of cases reported is beginning to shake our confidence in this tradition. The writings of Smithies, Eusterman, LeWald and others point to the relative frequency of syphilis of the stomach, but McNeill, in reporting a case, inclines to the view that syphilis of the gastric wall is in reality rare and that the increasing number of reported cases rests upon fallacious clinical interpretation of certain roentgenologic and other signs. He thinks that the stomach "misbehaves" when the liver, pancreas or other abdominal organs are diseased, and that this leads to a mistaken diagnosis of gastric disease. This fails to explain all of the cases. Lloyd Noland, for instance, tells of two recent instances of apparently inoperable cancer of the stomach which cleared up with amazing rapidity under salvarsan, and similar reports have been made by other men.

There were twenty-six cases in my series which gave X-ray and other appearances of ulcer of the stomach or duodenum, and eight of these gave a positive Wassermann reaction. Of these eight, five under the influence of salvarsan, as well as dietetic and other measures, have apparently recovered. I do not want to be misunderstood, however,

as claiming that all eight had syphilis of the stomach.

Pulmonary Disease.

There were twenty-eight cases of pulmonary disease apparently tubercular. Six of these gave a positive Wassermann reaction and of these only two showed the tubercle bacillus in the sputum. This brings up two interesting questions: first, of the co-existence of tuberculosis and syphilis; and, second, of the possibility of a positive Wassermann reaction from pulmonary tuberculosis alone. I think both questions can be easily answered. The two diseases do co-exist with a fair degree of frequency and the spirochete would at times seem to prepare the way for the tubercle bacillus. Snow and Cooper, as well as Craig, have answered the second question very satisfactorily by showing that the Wassermann reaction properly done is never positive in the presence of tuberculosis alone.

Pulmonary syphilis resembling tuberculosis is regarded as a very infrequent disease, and the rules laid down for its unquestioned acceptance in a given case are very difficult to fulfill. Of my six Wassermann positive patients of this group, five have shown satisfactory improvement under antisyphilitic treatment, and one was untreated, but since all had the benefit of the usual hygienic measures, no definite conclusions can be drawn.

Obscure Fever.

We recognize that syphilis, in common with many other infections, is the occasional cause of obscure low grade fever, and we have observed in this connection a certain influence of syphilis which I haven't heard discussed elsewhere. Several instances have been seen of specific infectious disease—particularly striking were two cases of typhoid fever and one of pneumonia—in which a low grade fever continued long after the original infection seemed to have subsided. In each of these, the Wassermann reaction was positive and a prompt subsidence of the fever was witnessed upon the administration of mercury. In each patient the latent syphilis seemed in no wise to influence the course of

the disease until convalescence started, and a slight fever of leucic origin then persisted.

The Wassermann Negative Syphilitics.

The Wassermann negative syphilitics form an interesting group which is obviously difficult to corral. Take, for instance, a case such as this: A young girl of thirteen was sent me by an oculist to determine the cause of her neuroretinitis. An enlarged heart was the only other finding and the Wassermann reaction was negative. Later, the father, on being questioned, admitted a venereal ulcer in early life and gave a positive Wassermann test as well as the early signs of locomotor ataxia. The patient's neuroretinitis quickly disappeared upon the administration of salvarsan. Her spinal fluid should have been examined, and would no doubt alone have completed the evidence.

Another young woman has, without obvious cause, grave myocardial disease with arterial hypertension. The blood Wassermann is persistently negative, but the likelihood of syphilis was made greater when inquiry revealed the fact that her father had years ago been treated for syphilis.

To give a provocative dose of salvarsan or mercury and then repeat the test does not in my experience often succeed. The statement that the lipotropic substances of the blood which in the syphilitic are responsible for this reaction vary in amount from time to time, and apparently without reason, has an important practical bearing; for at times a negative Wassermann reaction when repeated will, without apparent reason, become positive; and I have known the reverse to occur.

A young woman, recently a widow, presented a diseased, incompetent heart. The blood Wassermann was on one occasion negative and on another positive, and the information subsequently obtained that her husband had died of syphilis strengthened the diagnosis.

Recourse should be had to the spinal fluid for a solution of these Wassermann negative problems. Such examinations are not difficult or unduly inconvenient to the patient

and the yield in information is at times very valuable.

The Surgical Aspect.

Out of place though it may seem, I cannot forego comment upon the surgical side of syphilis as seen from the laboratory. For the past year we have been doing Wassermanns for the American Cast Iron Pipe Company, and Dr. W. L. Thornton, Surgeon-in-Chief for this company, kindly permits me to quote some of their data. This test has been done upon certain selected patients, particularly those with slowly healing wounds, as well as upon all prospective employees. There were 517 tests, of which 236 were positive. The most noteworthy feature here is the remarkable accuracy with which modern experience bears out the old belief that wounds heal slowly in people with "impure blood." Whenever an employee recuperates slowly from an injury, or his wounds show unusual inflammation and separation, the Wassermann reaction is almost sure to be positive. The violent reaction and the extensive destruction of tissue which follows injury to an apparently robust man with syphilis is remarkable when compared with similar injuries in other individuals.

Dr. Walsh, of the Tennessee Coal, Iron & Railroad Company, tells me that he observes repeatedly the same thing, and that the medical men of the company have come to regard certain radiograms of injured bone as typical of syphilis.

Another interesting feature of Dr. Thornton's series is the number of obstinate headaches or other obscure pains which were explained by a positive Wassermann reaction and cured by appropriate medication. There were sixty-eight such patients.

The baneful influence of latent syphilis upon the injured workman is such that this company now tests the Wassermann reaction upon every man who applies for employment and accepts only those with a negative reaction. The officers, both general and medical (and legal as well), are confident that they are thereby saved much expense, annoyance and ultimate litigation.

To compare the findings related above with

the history given by the patient is startling.

Among the forty-one cases in which Warthin was able to demonstrate active syphilis, eleven gave history of an infection with a subsequent clinical "cure," five were clinically active cases, and twenty-five gave no history or clinical sign of syphilis.

It is disquieting to note that such a large number of so-called "cures" show active syphilis in their tissues, but it is still more disturbing to observe in Warthin's report that among 120 necropsies, active syphilis was demonstrated in twenty-five patients in whom the disease had been in no wise suspected. In most of these cases, the diagnosis was made by finding spirochetes in the tissues, while in a small remainder the proof was furnished by certain characteristic histologic changes, regarded by Warthin as typical.

I admit that one would hesitate to accept unreservedly, when unsupported, such testimony, however careful and experienced the pathologist, but when I come to examine my own statistics I find similar figures. Among ninety-four patients of my series who gave a positive Wassermann reaction, only twenty-seven, 29%, in their histories admitted a venereal ulcer. It is startling to note that twenty-one of these believed themselves cured, most of them resting such belief upon a physician's statement.

An additional group of nine gave histories which were suggestive of syphilis. Grouping those who admitted an infection together with the patients whose histories otherwise suggested syphilis, we have thirty-six, 38% of the whole, in whom syphilis could reasonably be predicated.

The remaining fifty-eight patients with a positive Wassermann reaction, 62% of the whole group, gave no history direct or suggestive of syphilis, and it is interesting to study these in some detail. Six, on being confronted with a positive Wassermann reaction, then recalled a venereal ulcer which (designedly in some) had been forgotten.

A positive Wassermann reaction always led to further delving into family history, and in eight patients we were thus able to find unmistakable evidence of syphilis, not

previously recorded, in a husband, wife or parent.

There was a group of ten patients whose histories gave no record of syphilis, but whose examination in each instance presented what was taken as unmistakable corroborative evidence of such an infection. These included four cases of aortic aneurysm, one of aortitis, five of characteristic skin or throat lesions, one of paroxysmal hemoglobinuria, one of characteristic neuroretinitis, and one showing typical cell and globulin increase of the cerebrospinal fluid.

The results of treatment are difficult to tabulate. Many patients on returning home give unsatisfactory replies, many haven't the moral stamina to continue disagreeable and troublesome measures, and in others the results of antisyphilitic treatment are impossible to gauge, because, as in pulmonary and stomach diseases, additional curative measures were used. Of the fifty-eight who denied syphilis, nine were apparently relieved of all clinical evidence of the disease, eleven were definitely improved, sixteen received meager or no treatment or else were not heard from, one showed no improvement, and one died.

In the whole series of 567 patients there were seven who gave a persistently negative Wassermann reaction and no history of syphilis, but who presented clinical evidence of the disease. This included one case of neuroretinitis with syphilis in a parent, one of myocardial disease with syphilis in the parent, two of neurasthenia with syphilis in the parent, one of aortic aneurysm, and two of characteristic cerebrospinal fluid changes. It is unfortunate that the cerebrospinal fluid was not more often examined. If this had been done, this last group would, I feel sure, have been larger.

Outgrown Beliefs.

There is nothing immutable in the science of medicine. We must continually revise, even reverse our ideas, and few diseases exemplify this more clearly than syphilis. There is the fallacy of the primary sore! We know that the chancre is not necessary to a general syphilitic infection, and authentic in-

stances of syphilis in which an initial lesion can be definitely ruled out are becoming numerous. Witness the case reported by Fordyce of a male nurse who accidentally punctured himself with the needle just after obtaining blood from a patient with florid syphilis; no chancre or other lesion appeared on the site of the wound and a few weeks later unmistakable secondary symptoms appeared.

I can add a similar case: A physician in giving salvarsan to a patient with active syphilis, accidentally punctured his own finger. He also spilled the patient's blood upon his hand and sought to remove this by scrubbing with a stiff brush. Eight weeks later he consulted me because of a papular erythematous eruption upon his own person which was typical of syphilis. The Wassermann test was positive. He stated with some detail that the above related accident was his only opportunity for acquiring syphilis and I credit fully his statement. Careful search was made everywhere for a scar, discoloration or other evidence of a primary sore, and none was found. The finger and hand had been watched by him, but no sore developed. From such reports and from experience with patients whose accuracy of observation and statement cannot be doubted, one must recognize that general infection with the spirochete without a primary skin lesion does occasionally occur.

Then take the interesting observation of Colles that a mother who has given birth to a syphilitic child is not infected by her own offspring, although this child will infect a healthy wet-nurse; and the converse of this noted by Profeta that a syphilitic mother who gives birth to an apparently healthy child does not affect this child in nursing. Both observations are accurate, but the two laws deduced therefrom, and given the names of these authors, are fallacious. For serum reactions and our knowledge of immunity in syphilis tell us that in the former instance the mother, and in the latter, the child, each have syphilis in a latent form. The apparently healthy mother who gives birth to a syphilitic child cannot be infected by putting her child to the breast because she is already a victim of latent syphilis, and the syphilitic mother of an apparently healthy child most

often does not infect the child because of an already existing latent infection. While this deprives us of the laws of Colles and Profeta, it leaves us a wide field for speculation regarding the mutual relationship of spirochete and host in latent syphilis.

In the past we have pinned our faith too closely to the question of miscarriages as proving or disproving syphilis, and a family of robust children are often pointed out as conclusive evidence against syphilis in a parent. This is most unsatisfactory evidence. I know today of several instances of outspoken clinical syphilis with a positive Wassermann reaction in which the infection was acquired in early manhood to be followed by a long latent period, during which period the patient married and became the father of apparently healthy children. In one particularly pathetic instance, the wife now has cerebral syphilis as her first manifestation of the disease, and the ultimate fate of the two apparently robust children can only be a matter of anxious conjecture. Unquestionably a wife or husband with latent syphilis can become the parent of seemingly healthy children, and there need be no history of miscarriages.

Immunity.

Our ideas of immunity of syphilis, in view of the animal experiments of recent years, surely need revision. The entire subject has been admirably summarized by Zinsser. No evidence can be advanced in support of earlier beliefs that the subject of a luetic infection is forever thereafter immune to a second infection. The weight of clinical evidence and of experience with animals indicates that a certain immunity gradually appears coincident with the developing infection to reach its height in the early tertiary stage and to subside with treatment, and that after the individual has undergone a genuine cure he is again susceptible to infection.

All attempts at producing a passive immunity to syphilis, or at developing an anti-syphilitic serum, have failed and there seem to be good biologic reasons for believing that this is impossible.

Zinsser has called attention to some very

interesting experiments suggesting the possibility of a certain "pseudo" tissue immunity. It would seem that a tissue once infected with the spirochete loses, after a time, its ability to react further and that subsequent spirochetes can then pass through or even exist there indefinitely with the production of little or no change. He suggests that the skin of an individual recently infected is in a state of "anergie" and that spirochetes experimentally introduced may pass through and gain entrance to the blood stream without producing a skin reaction of any kind, thus explaining the apparent immunity of such individuals. It is possible that all organs after their first reaction to the spirochetal invasion gradually enter more or less into this state of "anergie," thus presenting the conditions which we know as latent syphilis.

Prognosis.

And what of the prognosis in syphilis? We still hold that early syphilis can be cured, but to accomplish this two things are necessary—reasonably large amounts of salvarsan and mercury must be given in the beginning; and treatment must be energetic, sustained, and long continued. Inefficient and hesitating, dilatory medication would seem to develop an arsenic fast or mercury fast strain of organism which can successfully resist all future treatment. Whether old syphilis is curable is another matter. We can only stay its progress and at times relieve remarkably the patient's distress, but there is good reason for questioning our ability to accomplish an actual cure.

Finally, to most of us syphilis represents, even yet, a mere breach of morals rather than an infection which only too frequently is innocently acquired. We can't shake off that loathing, that tendency to approach it gingerly. It is not necessarily a shameful disease, and many physicians of experience state that the innocent sufferers are more numerous than the guilty. The control of syphilis will never be a fact and its spread will never be curtailed until we can learn to look at it in a frank, open manner and so to discuss it with the public.

SIMPLIFIED ARTIFICIAL FEEDING.*

By John M. Lee, M.D.,
Nashville.

The movement for placing artificial feeding of infants on a scientific basis began in America. About the middle of the last century, Pepper and Meigs made careful comparative analyses of human and cow's milk and found them similar in many respects. They attempted to feed babies by diluting cow's milk and adding cream and milk sugar to make it more like human milk. Soon they discovered that, although they could make a mixture that approximated human milk in chemical composition, there were certain inherent qualities in cow's milk that made it difficult for the infant to digest.

Later Rotch conceived the idea that certain digestive disturbances were due to the fat, sugar or protein in cow's milk, and that the proper way to correct these disturbances was to diminish or increase any or all of the milk elements as might be indicated. This was the beginning of the percentage, or the so-called American method of feeding.

The next step came in the home modification of cow's milk as advocated by Holt, Chapin and several others. This included top-milk, milk and cream, whole milk and skimmed milk mixtures, which when properly used proved of great value. Soon it became evident to those studying the problem that there was a great difference in the curd of human milk and that of cow's milk, and Jacobi advocated the use of cereal diluents to modify the curd of cow's milk. Following this, the sterilization of milk by boiling or pasteurizing was a logical event.

Since the humble beginnings of Pepper and Meigs there have followed many European investigations, notably those of Czerny, Keller, Finklestein, Meyer, Rubner, Escherich, Heubner and others. In recent years the Germans have adopted the so-called caloric method of feeding, by which the number of heat units to be supplied in the food is de-

termined from the child's weight. More recently, other European workers, in their enthusiasm for simplicity, are advocating the feeding of undiluted whole milk given in smaller amounts than the usual feeding, but they advise giving water freely between feedings. This, after all, is only another method of using diluted whole milk.

Each of these methods has its value, and when properly followed has proven its worth. But any method of feeding improperly used will result in failure. The nutrition of an infant depends upon its power to digest and assimilate milk. These functions are best served by modifying the composition of milk so as to adapt the food to the individual needs of the infant. In a given case neither the percentages of the different elements nor the calories required can be positively determined by rule, but must be ascertained by a trial formula. Then from the manner in which the baby reacts to such a formula is determined the future food. The baby, not rules, must be the guide if the feeding is to be successful.

Rational feeding demands that we know the chemistry of fat, carbohydrate and protein, and understand the changes brought about in their digestion and assimilation before attempting to prescribe a formula. Not only should we know the changes produced in the body, but we should be familiar with the manner and character of the food remains as excreted under various conditions. By a careful examination of the urine and stools, we may learn that some element of the food is not properly adjusted to the baby's digestive capacity, and from such information be guided in the proper steps to correct the error. The caloric requirements of the infant is deserving of careful consideration. With these details must be correlated the clinical condition of the patient. Then having a working knowledge of the general principles of infant feeding, we may work out each individual problem with much greater assurance of success than if we make frequent haphazard changes in the food with no logical reasons for such changes.

There is only one specific food for an infant, and that is human milk. Man's inge-

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nity has not as yet provided its equal. This fact cannot be stressed too often. The ideal bottle food of an infant would, therefore, be one that would imitate breast milk and would contain 3 to 4 per cent fat, 6 to 7 per cent sugar, and 1 to 2 per cent protein, with mineral salts and water the same as in breast milk. Such a food when made from cow's milk is not well borne by most babies because the fat, sugar and protein of cow's milk are different from those of human milk. However, cow's milk is the one article of commerce that most nearly resembles human milk, it is generally available as a substitute food, and it can be so modified as to fulfill in most cases the requirements of the growing child. But in so modifying this milk, we must, in order to be successful, make it fit the infant's digestive capacity rather than have it correspond in chemical composition to that of human milk.

The less complicated the preparation of the food, the more nearly correctly will the mother or nurse carry out instructions and prepare the formula as desired. Thus far, the simplest method of feeding consistent with the general principles of infant feeding consists in diluting whole cow's milk with water and adding sugar.

Fat, sugar, and protein are interchangeable to a limited degree, but not to the extent that an infant will thrive throughout the feeding period on a food in which any one of these elements is entirely lacking. Fats possess the important property of saving nitrogenous waste, so that when these are properly supplied in the food the energy of the proteins may be expended upon the growth and nutrition of the cells of the body without being used up for the production of animal heat. They add to the body weight by storing up fat, and are necessary to the proper growth of nerve cells and bone.

Theoretically an infant's food should contain 4 per cent fat, since normal breast milk contains that amount. Cow's milk contains that amount of fat, but very few babies can digest and assimilate so much cow's fat, even though fat absorption in healthy babies is very high. Why this is so has never been proven, but Niemann attributes this to the

fact that cow's milk contains so much more of the volatile fatty acids than human milk. Any dilution of whole cow's milk naturally lowers the fat content of the mixture, so when we prescribe in the early weeks of a baby's life a mixture of one-third milk and two-thirds water, the food contains 1.33 per cent fat. About the third or fourth month half milk and half water can be taken, and this will have a fat content of 2 per cent. At the sixth month the average well baby can tolerate the fat in a mixture of two-thirds milk and one-third water, and the milk is gradually increased until at the end of the first year it is taking whole milk. It has been found that the fat contained in a mixture containing one and a half ounces of whole milk (4 per cent) for each pound of the baby's weight is usually sufficient to cover the fat needs of the infant organism, and in most cases is well taken care of.

Because of their high caloric value, sugars supply a large amount of nourishment to the body. Their chief use in the human economy is to provide heat and energy. They are capable also of replacing fat waste in the body, and like the fats they are aids to the protein, but cannot of themselves replace nitrogenous waste. Human milk contains 6 to 7 per cent sugar, while cow's milk contains about 4.50 per cent sugar; hence sugar must be added to any dilution of cow's milk to make it suitable for an infant's food. The sugars most commonly used for this purpose are milk sugar, malt sugar, and cane sugar. Malt sugar, being very expensive, is used in combination with dextrin. For many years it was thought that milk sugar was the best suited to the majority of babies. While we now know that one baby does thrive on milk sugar, another can tolerate only malt sugar, and still another does best on cane sugar. So in this particular, as in every other detail of infant feeding, we should fit the food to the baby. Too much emphasis cannot be placed on this fact.

It is claimed that when used continuously cane sugar has a slightly constipating action, while milk sugar and the dextrin maltose mixtures are slightly laxative. Milk sugar is more slowly absorbed than the maltose

mixtures and it is claimed is more conducive to the development and persistence of the normal intestinal flora. Finklestein and Meyer believe it to be the primary cause of fermentative dyspepsias of infancy. Maltose is more rapidly converted and absorbed, hence is less liable to cause fermentation and diarrhea. At present the malt sugar preparations are most popular in this country, and it has been my observation that fewer babies are upset by this sugar than by the others.

The quantity of sugar to be added to the milk mixture will vary with the baby. Dennett states, "A well infant under ten pounds in weight should receive one ounce of sugar in twenty-four hours, and an infant over ten pounds in weight may have one and a half ounces of sugar in twenty-four hours. He has found that from a practical standpoint such an amount supplies the carbohydrate needs, supplementing the sugar that cow's milk itself contains. Others tell us that sugar should be added to the milk and water mixture in the ratio of one ounce of sugar to each twenty ounces of the total mixture for twenty-four hours. But it is always advisable to begin by giving smaller amounts of sugar at first and increasing it to the baby's requirements. The baby that has been taking a sugar-free food, or one without any artificial sugar in it, must have his tolerance for sugar gradually increased by increasing the sugar slowly. If one ounce of sugar in the twenty-four hour feeding is given at first, diarrhea and vomiting may be the result. For this reason, the sugar must be added one teaspoonful at a time and at intervals of two or three days, until the required amount is reached. If one form of sugar has been used in the food and it is deemed advisable to change to another, one should be as cautious in increasing the sugar as if the baby had never taken artificial sugar.

The protein need of the infant is relatively much greater than that of the adult, because it not only requires protein to replace tissue waste but also to build up new tissue. The protein of an infant's food is supplied by the casein and albuminoids found in both human and cow's milk. But the protein in cow's milk is very different from that in hu-

man milk. And until recent years the difficult digestion of cow's milk protein was looked upon as the important, probably the chief cause of our troubles in infant feeding and the baby's formula contained the smallest possible amounts of protein. But we have since learned that the symptoms formerly ascribed to the protein were due to other causes. For instance, the curds frequently seen in an infant's stool were long regarded as casein curds and were thought to be the result of protein indigestion. We now know that these curds are most often fat, and it is seldom that we see real casein or protein curds.

Human milk contains about 1.25 per cent protein; cow's milk contains about 3.20 per cent protein. Therefore a mixture of half milk and half water would contain 1.60 per cent protein. Such a mixture is often given a baby three months of age. Formerly this was considered too much protein at that age. The common food proteins are made up of eighteen amino-acids, according to Abderhalden. Mendel tells us that growth is limited by one of these acids, namely, cystin. Casein is deficient in cystin, but this deficiency is usually supplied by the lactalbumin. Human milk contains twelve times as much lactalbumin as cow's milk. Hence when we give a mixture of cow's milk in which the protein is present in much greater amounts than human milk contains, we are only supplying the essential amino-acids in the amounts requisite for the normal growth of the infant.

Allen has shown that in twenty-four hours it requires the amount of protein contained in one and one-half ounces of cow's milk to the pound weight of the infant to cover the nitrogenous wastes of the tissues and to provide for the normal growth of the baby. If we consider the protein alone the baby can utilize even greater amounts than this, for Holt has shown by metabolism experiments that the general nutrition improved notably, the intestinal flora improved, and the infant metabolized as much as six per cent protein without any disturbance.

The salts of both human and cow's milk play a complicated and necessary part in

digestion and metabolism. As yet we have no conclusive evidence of harm resulting from the salt content of the ordinary dilution of whole cow's milk.

Some pediatricians adhere to the routine use of alkalies in milk mixtures in the belief that the excess alkali may meet the demands of the infant organism in an impending and obscure acidosis. Lime water, sodium citrate, and sodium bicarbonate are the alkalies used as a rule. While I do not feel that these substances are needed as a routine measure, we do know that in proper amounts they will prevent the formation in the stomach of the large tough curds from cow's milk and thus aid digestion. To be effective, lime water should equal 25 to 50 per cent of the milk in the mixture, while two grains of either of the sodium salts to the ounce of milk is usually employed.

Much has been written for and against pasteurizing and boiling the infant's milk. The ordinary dairy is not clean, no particular care is taken as to the hygiene of the barn or the surroundings; no particular care is taken as to the hygiene of the milk or the utensils in which it is obtained, and consequently the ordinary commercial milk is very likely to teem with micro-organisms, and may contain pathogenic organisms and be a carrier of disease. Boiling the milk lessens the danger from this source. Granting that scurvy is due to cooked milk, and this is still a mooted point, it is easily prevented by small amounts of orange juice. The constipation that may result from boiled milk is usually amenable to fruit juices and sugar in proper amounts. It has been proven that the curd from boiled milk is smaller and more flocculent, therefore more easily digested than that of raw milk. And it remains to be proven that the nutritive value of milk is decreased by heating. Morse and Rosenau advise cooking all but the cleanest milk. To my mind the advantages of cooked milk outweigh by far the disadvantages.

The use of cereal gruels as diluents in artificial feeding was first advocated for the prevention of the formation of large tough curds. For this purpose oatmeal, barley and wheat flour are commonly used. This is also

a means of supplying carbohydrate in the food of a baby whose tolerance for sugar is lower than normal. Although the new-born baby can digest a certain amount of starch, clinically it is, in most cases, best not to give starches until after the third or fourth month.

It is not enough that the baby's food contain the proper proportions of the various elements, but it should conform to the nutritive needs of the body. This is perhaps best determined by an estimation of the caloric value of the food. We are told that a normal infant of average size and activity requires from 45 to 48 calories per pound of weight in twenty-four hours during the first six months. During the last half of the first year 30 to 35 calories per pound weight for the twenty-four hours is usually sufficient. While these figures apply to the average baby, a fat baby usually requires fewer calories than an emaciated infant. Again a child that expends much energy in muscular activity will demand more calories than one who is of a more phlegmatic temperament. Of course, during intestinal disturbances or acute illness the caloric needs should be temporarily disregarded. While the calculation of the caloric value of a food is a valuable check, the so-called caloric method of feeding in itself is insufficient when it does not take into account the composition of the food. A proper number of calories may be supplied from a mixture of cheese, crackers and water, but such a mixture is unsuited to the average infant's digestive capacity.

The amount of food to be given at a single feeding depends on the baby. By X-ray observations it has been shown that before the baby has completed his bottle, much of the food first taken has passed out of the stomach into the intestine, so that the plan of determining the amount of each feeding by postmortem measurements of the stomach is not a good guide. The frequency of feedings is to be considered, as well as the dilution of the food. It is obvious that a baby will require a large amount less often than if smaller feedings are given. The more dilute the formula, the more quickly will that food pass into the intestine; the higher the fat content of the mixture, the more delayed

the emptying of the stomach. Although breast-fed babies do not take the same amount at each nursing, it is advisable to give the same quantity of artificial food in each bottle. Clinically it has been found that the average child will take at each feeding one or two more ounces than the number of months of its age. Of course, an undersized infant might take less than such an amount and a large baby might require more. It is seldom necessary or advisable to give more than eight ounces at a single feeding, and forty-eight ounces should be the maximum total amount for the twenty-four hours. As a starting point when prescribing the first formula, I have found it a good rule to make the total amount of food for the twenty-four hours equal one-fifth to one-seventh of the body weight of the baby expressed in ounces.

No definite rule can be given as to the intervals between feedings. A majority of babies do well on the three-hour interval, from 6 a. m. to 9 p. m. and a feeding at 2 a. m., making seven feedings in the twenty-four hours. After the fourth or fifth month the 2 a. m. feeding may be omitted. I find this a good plan to begin with, and then if it appears that such a routine is not best suited to the baby, I change to a two, two and a half or four-hour interval, as the case may demand. No matter what the interval between feedings may be, it is most important that the baby be fed regularly by the clock. If he is asleep at feeding time he should be waked, and if the food is properly suited to his digestive capacity and nutritive needs he will soon go to sleep again.

Having these general principles of artificial feeding in mind, and being called upon to prescribe a formula for a well baby, we would proceed as follows:

For each pound of the baby's weight give one and one-half ounces of whole milk.

Add boiled water to make the total volume of food for the twenty-four hours equal one-fifth to one-seventh the number of ounces of the baby's weight.

Add sugar in the proportion of one ounce of sugar to each twenty ounces of the mixture for the twenty-four hours.

Divide the total mixture into seven equal amounts.

Feed every three hours from 6 a. m. to 9 p. m. and at 2 a. m.

This provides a food that fulfills the nutritive needs and fits the digestive capacity of the average normal healthy baby. If the baby has never had cow's milk or artificial food, it is well to give at first smaller amounts of milk and sugar than stated above and gradually increase both until the child's tolerance for these foods is reached. We realize that a formula prepared according to the plan suggested above will not suit some babies, but such a food will serve as a starting point, and then we must be governed as to our future course by the symptoms presenting in each case.

THE MANAGEMENT OF BREAST FEEDING.*

By Oliver W. Hill, M.D.,
Knoxville.

When our Secretary assigned this subject to me, I accepted with some misgiving, as it was so trite and so little attention had been paid it that it was almost considered unimportant—in spite of the fact that a majority of the patients of the average practitioner consist of nursing babies or of children under one year of age.

The consensus of opinion seems to be that these little patients need no management except removing from the breast if they do not do well. Each doctor considers himself an expert on artificial feeding, and usually has one hobby or mode of feeding to which all infants must conform. When we consider the enormous mortality of infants under one year old we must be impressed with the importance of the subject.

The systematic attempt to place the nourishment of the infant upon a truly scientific

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basis was first begun by Czerny and Keller about 1905. Although a great deal of scientific and practical work had been done on the nutrition of the infant prior to this, this seems to have been the first attempt to classify this subject.

Physicians have long recognized that the best food for an infant is human milk. In spite of this, thousands of children continue to be placed upon artificial feeding, some to thrive, some to live and suffer from nutritional diseases, and some to die. The responsibility for the failure to conserve the maternal milk supply, while dual, rests with greater weight upon the physician, who, while realizing the value of natural, and the dangers and uncertainties of artificial feeding, has failed to become fired with that enthusiasm which the subject demands. Consequently, many mothers are lacking in enthusiasm.

It must be stated, first, that the majority of women, providing they are disease-free, can nurse their young. The physician should, therefore, from the day that his patient comes under his charge for her expected confinement, point out to her at every opportunity the advantages of maternal nursing and the dangers of bottle feeding. It is a grave error, too often committed, to discontinue the breast at the first sign of indigestion in the new-born—an occurrence so common that it may almost be regarded as normal. A mother, on the other hand, will frequently believe that her baby is not getting sufficient nourishment or that her milk is too weak or too rich, and that altogether she is unfit, both from her own and the standpoint of her infant's health, to suckle her babe. The psychic element, represented by fear and uncertainty in the mother's mind, is a very potent cause for the discontinuance of maternal feeding and is exceedingly difficult and sometimes impossible to overcome. In fact, fear and anxiety may cause temporary suspension of the lacteal flow, just as of the other secretions—saliva, for instance. The physician here again fails in his function if he thoughtlessly coincides with the mother's idea without investigation. True it is that there are contraindications to maternal feeding, but

these will really be found to be few. In our zeal to secure some substitute for or imitation of human milk, we have been carried away from the truism that nothing is quite so good as the real article, and that, if we should have it, there is plenty of it at hand; and that the study of its conservation is perhaps the most urgent duty of the pediatricist and of the practitioner.

The best guide as to a particular woman's ability to nurse is the physical condition of her babe. If its weekly gain equals from 5 to 7 ounces or even a little less, then nothing else need be considered. In spite of this, on the plea that the milk is insufficient in quantity and quality, although the simple process of weighing the infant before and immediately after nursing for a few times was not practiced; or that the infant failed to gain weight (even in the absence of a milk analysis); or that it suffered from digestive disturbances, physicians are daily sacrificing the human milk supply. Granted that these conditions are realities, one may pertinently ask, "Do they constitute a sufficient reason to stop breast feeding?" Certainly not! As will be pointed out later, there are methods of conservation and correction whereby any or all of the various elements may be augmented or diminished. These it is the physician's duty to know and to practice.

Breast feeding may be done either by the mother or by a wet-nurse. The former is by far the more satisfactory. The latter is useful in emergency.

For clinical purposes it is proper to inquire, "When do conditions arise that demand or which would be benefited by a careful analysis of the milk which the infant is receiving, and how are these results to be interpreted?" Unless there be a distinct indication, the interest attached to such an examination is purely academic and serves no practical purpose. On the other hand, if the infant is not thriving, or if there be evidence of indigestion or colic, or if the mother doubts the good quality of her milk, analyses are of use. "If the analyses show the milk to be poor in all its constituents, does this mean that it is an unfit food for the particular baby receiving it?" Not necessarily. The best

guide is the condition of the baby itself, and not infrequently is it seen that an infant will gain steadily on what appears to be a weak milk, while another will not thrive on a rich one. If, however, there exists a combination of an undernourished babe together with a poor milk, the indication is clear to improve the quality of the mother's milk or to try mixed feeding, or, as a last resort, artificial feeding alone.

The value of a milk analysis in determining which of the food elements of the breast milk are responsible for the symptoms of indigestion is incalculable, and often is the means of saving to the infant the maternal milk. The information thus obtained frequently permits the physician to speedily correct the trouble through treatment of the mother. Psychic influences exert a tremendous effect upon the secretion of the breast milk, and if a milk analysis will convince a doubting, fearful though willing woman that her milk is of good quality, the time consumed and the expense will have been well worth while.

In his daily contact with his patient the general practitioner meets no question with more frequency than that dealing with the nutrition of the infants under his charge. His responsibility has been indicated already with reference to the necessity of attempting the conservation of the human milk supply. The question may very properly be asked, "What are the advantages of breast feeding?"

Gastrointestinal and nutritional diseases are responsible for 53.5 per cent of all the deaths which occur in infants during the first year (Holt). Practically all of these are artificially fed. This should be sufficient argument to encourage both physician and mother to conserve the milk supply, and should at once take the right from both or either to arbitrarily decide whether the infant should receive the breast or not. It makes the obligation mandatory. Too frequently the breast is sacrificed because, without investigation, carelessly and heedlessly, the physician or the mother, or the former yielding to the wishes of the latter, decides that the milk is unfit for the baby. A wom-

an may declare for a whim that she does not want to nurse her infant; that it will interfere with her social duties; that it is not aesthetic; that Dr. So-and-So knows how to feed babies artificially, and that she will put her infant under his care; that she has a friend who reared a baby on a popular patented food, and that she will do the same. These and many others are the reasons for withdrawing the breast. Neither physician nor layman possesses an inherent right to destroy a helpless babe's means of sustenance.

Digestive disturbances occur with less frequency and with less severity in the breast-fed. They are usually of no consequence and seldom are associated with nutritional disturbance. Breast milk possesses antirachitic and antiscorbutic properties not found in any other food. In human milk there probably exist certain substances which confer upon the infant a natural immunity against the acute infectious diseases, as these occur with extreme rarity during the first year, especially in the breast-fed. On the other hand, their incidence in this class of patients is marked by less severe symptoms and recovery is the rule. In the breast-fed dentition is rarely troublesome. Breast babies gain regularly in weight, sleep well, and are happy. The so-called dreaded second summer does not exist for the naturally-fed infant and danger of milk infection is absent. The food is always practically sterile, of the proper temperature, and requires no preparation.

A baby thriving on the breast up to the first six months should gain from 5 to 7 ounces a week. It may be a little less or a little more. After this, while progressive, the weekly increase is less. The normal stool of the breast-fed infant is yellow, smooth, mushy, and free of particles and mucus. It has a pleasant, slightly acid odor, and is weakly acid in reaction. The bowels move from one to four times a day normally. Vomiting does not occur. The infant may regurgitate a little food just after feeding or when unduly handled. Unless viciously trained, it is happy, contented, does not cry, sleeps

peacefully between feedings, and awakens regularly at feeding time.

If the infant does not thrive, if its gain in weight is small or unsteady, or it does not gain at all; if it vomits, has indigestion, is fretful and sleeps poorly, the cause will rarely lie in the mother's milk. More commonly there will be found some error in training, or the infant has received other food in addition, or is suffering from some organic disease of the gastrointestinal canal. Very commonly breast-fed babies may be constipated and mothers are in the habit of daily using an injection or a suppository. Not only is this unnecessary, but in many instances is directly responsible for the inauguration and continuation of constipation. The mother should be taught to allow the infant to go twenty-four hours before resorting to laxatives, suppositories or injections. At the end of this time, and usually before, the baby will have had an evacuation. Before the breast is withdrawn as the cause of trouble, every other possible etiologic factor must be investigated.

During the first month nearly all breast babies suffer from indigestion. Few escape it and some continue to have it throughout the nursing period. Some present subjective symptoms, some do not. The latter are in the majority. Some lose weight, most of them continue to gain. The symptoms are largely objective and may be referred to the stomach and bowels. Vomiting in the suckling, as the direct result of dyspepsia, depends largely upon excessive individual feeding, too frequent feeding, undue handling, and upon an excess of fat or sugar in the mother's milk. Food comes up unchanged when vomiting occurs immediately after feeding, or if appearing an hour or two later, it is sharply acid, smells like rancid butter, and is yellowish white in appearance.

Excessive fat also causes loose bowels, which may contain considerable mucus. The movements average from four to five a day, are usually yellow, occasionally green, and contain white masses that resemble softly-fried white of egg which has been chopped up and scattered throughout the yellow mass. These white masses are soluble in ether, read-

ily burn, and are turned back by osmic acid. These babies usually have some colic and may be fretful and irritable. If the stool be placed in water, oil-drops float upon the surface. If there be a deficiency of fat, the infant fails to gain, becomes constipated, irritable, and if the condition continues, rickets is a common sequence.

Indigestion depending upon an excess of sugar is marked by sour, watery vomitus which burns the infant and causes it to cry. The bowels are loose and watery, highly acid, and excoriate the anus and buttocks. Colic is common. The temperature may reach several degrees above normal. A deficiency of sugar causes subnormal temperature, loss of weight, irritability, and constipation.

Protein excess may or may not be associated with vomiting of curds. Most commonly the bowels are loose and contain yellowish white masses which are tough and which react to the test for protein (xanthoproteic). The movements are green or yellow or yellowish green, and contain some mucus. The constipated, dry, crumbly movement of protein excess is not met with in the breast-fed. A deficiency of protein means underdevelopment, stationary or decreasing weight, late waking, late dentition, anemia, asthenia, constipation and irritability. The condition may pass on to rickets.

An excess of mineral matter causes diarrhea; a deficiency, constipation and curvy.

Treatment: The most important thing to remember is that when symptoms of indigestion or of metabolic disturbances occur in the breast-fed, the first thing not to do is to take the child from the breast. This is commonly done, and from this time on dates the beginning of many cases of fatal diarrhea and inanition. Indigestion in the breast-fed is not a serious condition and usually lends itself readily to intelligent management. The essential thing is to watch the infant's weight from week to week and its development. If it shows a steady gain, no change should be made. In any case, the breast should not be given up without at least one month's observation. In the meantime, if the symptoms be severe, an initial purge of castor oil may be given, although this is not

often necessary unless the symptoms of colic be unusually severe. A hunger period, allowing only weak tea sweetened with saccharin, gr. j to the quart, answers best, and an earnest attempt should be made to modify the mother's milk. If any of the ingredients are in excess, especially the fat or protein, a little plain water or barley-water, well diluted, should be given ten minutes before feeding time in order to dilute the milk. More troublesome, and no more useful, is the withdrawal of the milk from the breast, diluting it and feeding it from the bottle. Colic, if troublesome, is usually relieved by the castor oil, or by 5 to 10 drops of the aromatic fluid extract of cascara, or 5 to 10 drops of essence of peppermint in hot water, or half dram to a dram of aqua camphorae or aqua menthae sodae (soda mint) in conjunction with the hungry period. A spice poultice is soothing if applied to the belly. The same quieting effect may be secured by a warm asafetida enema or 10 to 30 m.m. of the milk asafetida by the mouth. After feeding the following powder may be of service:

Extract of pancreatin	
(Fairehilds)-----	gr. j to gr. ij.
Taka diastase (P. D. &	
Co.)-----	gr. j. to gr. ij.
Sac. lactis -----	gr. v.

In cases with subnormal temperature, external heat and massage with plain or with cod liver oil are useful.

The further treatment includes an intelligent modification of the mother's milk based upon a correct diagnosis as to which of the ingredients of the milk are at fault.

It has been shown how maternal milk may disagree with an infant owing to an excess or to a deficiency in any one of its chemical constituents. Such a contingency may, at times, be overcome by the use of certain hygienic measures which have the power of influencing the composition of the milk.

Excess of Fat: This is a matter of individual idiosyncrasy. In reaching a conclusion the result of the analysis may not be taken alone. One infant may show disturbances on 2 per cent fat and another may tolerate 5 to 6 per cent. Give the mother a

morning purge, preferably Epsom salts; increase her liquids, especially water and weak tea; increase her exercise; lessen somewhat the amount of all food, especially milk, removing the cream from it in some cases. Cut down the protein (beef, peas and beans) and the fat in her diet.

Deficiency of Fat: Control diarrhea, lessen exercise, and increase the beef and other proteins, and fat of her diet. Make her drink freely of rich milk. Give tonics and digestants to improve the material appetite. The addition to the diet of some preparation of malt or the weaker alcoholic beverage containing malt is beneficial. Southworth's soup, made by boiling one or two tablespoonfuls of cornmeal in a quart of water to which some palatable flavoring has been added, when taken daily, is not only an efficient galactagogue, but increases the fat of the milk. Iron in some palatable form, such as Bland's pill, has given me much satisfaction when indicated.

Excess of Protein: Increase the exercise. Increase the fluids, especially water (2 to 3 quarts a day). Relieve constipation. Reduce vegetable and animal protein.

Deficiency of Protein: Give tonics, as iron and phosphates. Lessen the exercise. Lessen water and other fluids. See that the diet contains plenty of milk, beef, peas and beans. Give Southworth's soup and plenty of lean meat, eggs and protein vegetables.

Excess of Sugar: Remove carbohydrates from the diet and prohibit the use of candy and rich desserts. Increase the fluid intake. Increase the exercise. Give an occasional saline.

Deficiency of Sugar: Increase the carbohydrates, especially sugar. Lessen the amount of water. Lessen the exercise. Order a daily allowance of some malt preparations, when patient can take it.

The total quantity of milk may be deficient. The first indication is to control psychic disturbances. Any undue loss of blood or other of the body fluids must be prevented or stopped. At least two weeks' rest in bed after confinement must be enjoined. Following this the mother must secure plenty of rest, and later a sufficient amount of gentle exer-

aise, together with an abundance of easily digested food. She should be made to drink freely of water, weak tea, and milk. These should be used, together with galactogogues, of which cornmeal soup is an admirable one. Iron will also increase the total quantity of milk. Lutein, derived from the corpus luteum of the hog, is said to give results. Placing the infant regularly to the breast is an excellent means of stimulating the flow of milk.

If the supply of milk be excessive, caking must be prevented by regular feeding intervals, the occasional use of the breast pump, hand-milking, gentle massage with warm oil, and the administration of gentle laxatives, as cascara or a small dose of Epsom salts.

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PATENT FOODS.*

By O. H. Wilson, M.D.
 Nashville.

Realizing that to many the problem of artificial feeding means merely the selection of a proprietary food, the purpose of this paper is to point out the differences in these various foods and to facilitate their intelligent use.

Milk is a solution of sugar, proteid and salts, suspending emulsified fat. Cow's milk for practical purposes is the only available substitute for the breast, and while it ostensibly contains the same elements, fat, proteid, sugar and salts, each one of these, with the single exception of sugar (lactose) differs materially, in its ultimate analysis, from its analogue in human milk. So that, except for the sugar and water, cow's milk and human milk are by no means the same, though in all substitute feeding cow's milk is the

only source of the fat and proteid, and no practical food has ever been suggested without cow's milk as its basis.

The carbohydrate, lactose or milk sugar, is the only element identical in every milk, yet strangely the chief difference in the various foods is in the kind of carbohydrate they contain. This leads us to consider briefly the part carbohydrates play in infant feeding.

Sugar is not merely a condiment, but a very necessary part of nutrition. Over half of the solid content of human milk is sugar, and nearly half of its food is in the sugar. As artificial feeding has chiefly proceeded along empirical lines, with human milk as its model, and as lactose is the one feature we can exactly copy, it seems almost irrational to discuss other forms, but clinically other sugars seem to suit as well, and many think better. In describing sugars, we may speak of four varieties, dextrose or fruit sugar, lactose or milk sugar, saccharose or cane sugar, and maltose, or, more properly speaking, maltose with dextrin, as pure malt sugar is commercially too expensive for practical use.

Fruit sugar is the ultimate form in which all sugars are absorbed, the others being changed into this by various digestive processes. As a food, however, dextrose has never succeeded as it would appear that it should, though I know of no extensive experiments on this line. It can be, therefore, eliminated from the list, and discussion limited to milk, cane and malt sugar.

Most healthy babies take any form of sugar and thrive, but some are more particular and show decided preferences. In feeding well babies, some leading paediatricians routinely use milk sugar, basing its claims to superiority upon the fact that it is the form found in all milks, and upon the theory that its slower absorption favors the growth of normal intestinal flora, and also that it does not readily undergo yeast fermentation. The objections to it are its cost and the difficulty in procuring the pure article. Other men, and I believe the majority, regularly use the more convenient cane sugar, claiming equal results with less cost and less danger of sub-

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stitution. All recognize the importance of malt sugar, which is especially indicated in disordered digestion with difficult assimilation of fat and proteid, especially fat, though it probably suits healthy babies equally as well as the other forms.

Maltose is readily absorbed, requires but little digestive activity, but ferments readily, and a slight excess will cause distressing symptoms, especially in very young babies.

Sugars play an important role in infant feeding. Granting that one has the proper idea of adjusting fat, the selection and dosage of sugar determines frequently the success or failure of a food. Certainly it is the only element in feeding which can be qualitatively modified.

With a wholesome feeling of respect for sugar, we can now approach the subject under consideration, patent foods. These will be considered under two heads: First, complete foods, those requiring simply the addition of water. All these have as a basis concentrated milk to which some form of carbohydrate has been added. Second, those foods intended to be added to fresh cow's milk. These consist of the various forms of carbohydrates. Milk in some form must enter into every food, furnishing the fat and proteid, also a part of the sugar. The patent end is the added carbohydrate.

Let us consider some examples of the first class, complete foods with a milk basis, water to be added. Complete foods are all made upon the same general plan, of course differing in the technique employed. Skimmed milk is generally used in their preparation, as no process has ever been perfected by which the full fat content can be successfully preserved.

The average amount of fat contained in the strongest permissible solution is but a little over one per cent, about one-fourth the amount found in fresh cow's or human milk. The skimmed milk is evaporated down to one-sixth its volume, and then an equal weight of the carbohydrate added. In one case cane sugar is added, and in another malt, and in another milk sugar, and in some, mixtures of these, and some add starch.

All varieties have a great excess of carbo-

hydrates, averaging about 60% in the concentrated state, and in order to get something like 1% of fat in a food preparation, there must be nearly 10% of carbohydrates. The fact that many babies apparently thrive upon these mixtures proves that to some extent sugars may replace fat in infant metabolism.

Carbohydrates are heat producers and fat storers, and even if a baby's digestion can successfully manipulate the excess of sugar, and show an abnormal gain in weight, such children are usually backward in muscular and bony development.

All these foods must be boiled, completely sterilized to preserve them, and the lack of freshness is a serious fault. Hoit says he has never seen a baby fed entirely upon a patent food for twelve months without rickets or scurvy due to absence of fat or freshness. We must keep these deficiencies in mind. In many instances trouble does not wait twelve months to appear.

The excess of sugar is the real danger. This is liable to cause loss of appetite, vomiting, chafing acid diarrhoea, with sugar intolerance, and when this intolerance is once established no sugar is well borne. In ordinary practice when these symptoms occur the particular food is usually discontinued and some other quite similar substituted, with, of course, the same high sugar content, though probably of a different form, almost certain to cause the same symptoms. The proper treatment for sugar intolerance is to stop all sugar for several days, then begin gradually, preferably with a different form.

The use of starch in infant feeding is a relic of our ancient fear of proteid, which at one time was supposed to be the chief source of failure of artificial foods. We were taught that starch prevented the large tough indigestible curds and greatly facilitated assimilation. We now know that boiled starch is to a slight extent digested even by young babies, though its chief claim to a place in an infant's dietary is that by its colloidal action it coats the intestines and mechanically protects it.

Now for the good points in this class of foods, and they have them. First, they are

reasonably sterile, though there may be serious exceptions. Second, they are easy to prepare and uniform, and are to be preferred if feeding must be entrusted to a careless mother or an ignorant nurse. In such hands cow's milk is dangerous. Third, clinically they succeed frequently when cow's milk has failed. The reason for this is in their low fat content and their relative sterility.

They may be prescribed under the following conditions:

First, when reliable cow's milk is not obtainable.

Second, in mixed feeding; when the major part of the nourishment is derived from the breast, these foods may be used for the supplementary feeding, thus relieving the mother of the intricate care of cow's milk, which must be just as accurate for one or two feedings as for the entire twenty-four hours' supply.

Third, in traveling babies, an unfortunate fate; with an otherwise uncertain and changeable food supply, these foods are convenient and safe, obviating the necessity of sterilization and refrigeration. It is well in such cases to add to each feeding some fresh cow's milk when a reliable supply is obtainable, omitting it when the source is doubtful.

In using patent foods, one must constantly keep in mind the danger of scurvy, and if possible give regularly fresh fruit juice.

The incomplete foods—those to be mixed with fresh cow's milk—are invariably carbohydrates, adding to the proteid and fat only the negligible amount of these elements contained in the grain from which these foods are prepared.

One should be cautious in the use of these foods. They are carbohydrates and may cause sugar intolerance. As in the case of the other variety, the complete foods, it is not safe to follow the printed directions. They invariably give a great excess of sugar in the mixture. Directions seem to be printed to use up as much of the stuff as possible, rather than to adjust it to the patient. I see no excuse for the existence of this class of foods, and their use rather implies ignorance. They are as good, of course, as the corresponding carbohydrate, and in many

instances vast improvement follows their use, just as one might expect from the proper adjustment of the carbohydrate.

They are not simply unethical, but really dishonest. Is it right to make your patient pay Mr. X \$1.50 a pound for malt sugar even if he does put a little bicarbonate of potash in it, when you can buy it at 50 cents per pound? Or Mr. Y, \$1.25 for milk sugar slightly adulterated with starch and dried albumen, when the pure article can be purchased for 40 cents per pound? Or Mr. Z., much more modest, 80 cents a pound for a product which is identical with baked flour? Such a thing should not be permissible, even if they do offer us a profit-sharing scheme.

DISCUSSION.

DR. H. K. ALEXANDER, Nashville: I want to speak of one or two points in regard to the pasteurization of the milk which was referred to by Dr. Lee.

In the City Clinics here, of which we have four, we have been using pasteurized cow's milk for seven years. At first, we used pasteurized milk up to 167 degrees F. for 20 or 30 minutes. Later, we have been using only milk pasteurized to 155 degrees F., finding that the diphtheria, typhoid and tuberculosis bacilli are killed at that degree.

Quite a few articles have been written lately condemning the pasteurization of milk, and Dr. Lee referred to the article of Francis and Daniels where they used the pasteurized milk on rats, and found they only reached one-half their normal size. Yet in view of this, I think, there is no reason to condemn pasteurized milk for infants. We find in the clinic we have very little scurvy. The scurvy we had was a scurvy before the pasteurized milk was started, that is, when the patients were brought to the clinic.

With reference to patent foods, I simply mention them to condemn the general use. They have their field, but I think their field is very limited. I am heartily in favor, if we have to use an artificial food, of using pasteurized cow's milk.

DR. THOMAS H. MILLER, Nashville: In regard to pasteurized milk, to which Dr. Alexander has referred, in the city dispensaries here we first did our own pasteurizing. We had considerable trouble. By the way, we used milk sugar the first year. We had more trouble—at least I did—than the second year when using the milk from the Nashville Pure Milk Supply Company. We had a little less handling of the milk. That is a very advisable thing if we could manage it, namely, to handle the milk as little as possible, especially where you have

30 or 40 children coming into the dispensary. These troubles will spread while handling in the same room. We have had very little trouble over the use of cane sugar, not as much as we had in the use of milk sugar. It may have been due to the fact that we were more experienced in using it, and on that account we had less intestinal trouble. We treated the first year at my station 75 cases and we lost 8 or 9 babies the first year. The second we treated 105 at each station, and of this number we lost 2 babies. Of course, we were a little more experienced and used this milk and avoided bowel trouble. We have had different things to use, especially when the fats do not agree with the baby and we have to use condensed milk. If you can make milk that suits the baby, all right. You can not use condensed milk that is evaporated very long. It can only be used temporarily. The milk I have used in private practice is for those green, undigested fats we have and which cause intestinal trouble. I have tried the use of urotropin and benzoate of soda experimentally. I would give it and nothing else and see if it did good. It seemed to do good, and I would go back to using castor oil in the beginning, lower my foods, and I have had less trouble since using urotropin and benzoate of soda. I suggested to Dr. Hibbert that he use it, but he objected to it. It is used in small doses, seldom over a grain of urotropin, and the benzoate of soda in two or three grain doses. I think it does good. Of course, I have not used it to any great extent on account of not having a station.

DR. J. T. MOORE, Algood: I want to say a few words in reference to a point brought out in Dr. Lee's paper. He emphasized a point which I think is very important, and that is to keep the baby on mother's milk. Unless the mother has some organic disease which prohibits the child from nursing at the breast, there is scarcely a thing where we can do better than to keep the baby at the breast. If we have to substitute a part of the food for a baby, no matter if it does badly, and it is hard to keep alive until it is a year old, the chances are better than when we remove it entirely from the breast. If we can let it nurse at the mother's breast twice daily, we will do better than if we take it away all at once. We have a baby that has poor digestion to start with. Take a baby like that and give it artificial food entirely and we are up against a proposition.

As to patent foods Dr. Lee brought out a splendid point, namely, to give the baby according to your judgment what seems to agree with it. If I have a baby that is doing fairly well and gaining, I think we should be cautious in changing the baby's food because a little step in the wrong direction may cause an acute indigestion which you cannot relieve and the child may die. If the baby is gaining and doing fairly well on any food, we should be cautious about changing that food. I think there are some cases in which we are compelled to

give proprietary foods occasionally. I believe the healthiest babies I have ever seen have been those fed on artificial foods and modified cow's milk in some way.

In the management of breast-fed babies, the most difficult proposition we have to contend with is babies that come into this world crying with colic and continue to do so for several months. In such cases I have exhausted all the resources at my command in trying to keep these little patients from crying. They keep the young daddy and the mother awake every night, and it is difficult to know what to do for them. The parents come to you and worry you. The baby will grow fat, is a healthy looking little fellow, but cries and kicks. He looks all right. Nearly all of those babies are constipated. When the parents first consult a doctor he has to give the baby castor oil. They begin with castor oil. If the baby's bowels do not move exactly when they think they ought to, they think they have to keep on giving castor oil, and so the habit grows and they have to give more and more of it, and we have a constipated baby taking considerable quantities of castor oil when we are called on. If any one can tell me how to relieve a case like that, I would like to have him do so. I have not been able to relieve these constipated babies.

DR. HILL (closing on his part): I will tell Dr. Moore how to cure colicky babies. As a usual thing, these babies are subjected to either an excess of fat or an excess of sugar. Occasionally one will be an excess of protein. You can by examining the stools with care find out the predominating element in the child's indigestion, and by that means you can regulate the mother's diet and correct that condition to great extent. If curds continue and there are fat curds, sodium citrate in small doses in essence of pepsin will have a happy effect. If there is an excessive amount of sugar, you can use taka-diastase and have the mother cut down her sugar. Thus you correct the carbohydrate or fat excess and relieve these little patients in that way.

A mother called me up at 2 a. m. and said that her baby had been crying for four days and four nights. The child was promptly relieved by a dose of castor oil. Now, castor oil as a purgative is great; as a laxative it has no place. So many people give a child a teaspoonful of castor oil every day. Even some doctors recommend it. It makes a badly constipated child. When you have these children to contend with, you can better use a cascara preparation or milk of magnesia or sweetened water before nursing, the last named provided it is not an excess of carbohydrates. You can dilute the milk by giving two or three drams of water which will stop the indigestion. The colicky pain in the belly is due to the inability of the child to digest the food that is given. You can correct that to a great extent. You can increase the

protein fats or carbohydrates in cow's milk. We ought to do with the mother by judicious feeding what the farmers do with their cows. They can take a cow and increase the amount of fat to an enormous amount or cut it down with different kinds of food.

As to proprietary foods, sometimes I resort to the use of patent foods. The essayist condemned them strongly, but there are positions and conditions in which you cannot use cow's milk. Some times it is not obtainable and the parent cannot modify or prepare it. I have made a reputation for taking babies off of cow's milk and putting them on proprietary foods. You can add a little freshness by giving a small amount of milk at a time, or you can gradually put them on cow's milk without disturbing digestion.

As to the pasteurization of milk I have pasteurized milk under all circumstances all summer long, and have yet to see a baby who did not get along well with pasteurized milk. The milk is pasteurized at 165 degrees to 170 degrees F. In the first place it destroys the bacteria, and the next thing is that it helps the digestion of the protein constituents of cow's milk.

I see many patients where the doctor has told the mother the milk was disagreeing with the patient without any reason. The reason the general practitioner is so prone to take a child off of mother's milk is because he is lazy and slovenly in his habits and does not try to investigate.

DR. WILSON (closing): I do not think I have anything in particular to add. I do not use pasteurization. I do not see any advantage in pasteurization over boiling. I think of all elements that give trouble in feeding babies, fat is most troublesome. A certain amount of fat is absolutely essential, and the more fat a baby can take up to four per cent., the better.

I will speak briefly of another point in connection with the boiling of cow's milk. We have noticed for many years a tendency in the spring, especially in the early summer, about the 1st of June, for babies to get sick. We do not know why. They get sick with the best milk and under the most favorable circumstances. Their sickness has been attributed to something in cow's milk, due to an increase in richness of the pastures. It is during the clover season. That is the time when most cows have diarrhoea. That is the time when babies have diarrhoea. This is in some way due to the feeding. It is not due to impure milk. It occurs in babies who are on certified milk and milk that is unquestionable. I do not know why that is or what it is, but I do know that if you lower the fats, and boil the milk, you will escape some of it. It seems rational to attribute it to an excess of fats. Take milk in March, you cannot see the line of cream; there is little there. Take milk in April, May, and June, and the milk is half cream. There is a great increase in the cream of cow's milk in these

months. A baby does not need fat in hot weather. The normal mother is better in March than in April when she begins to have spring fever. She produces a richer milk in March than in May. A cow is not adjusted to the human needs, and the mother is. When we ought not to have rich milk we have it, and when he do not need an excess of fats we have it. That is one reason we have trouble with artificially fed babies. Some say there is some alkaloid passing through the milk, or there is some element in the cow's condition that causes the milk to produce diarrhoea with being absolutely infected. Personally, I do not know what it is.

For the past two or three years I have been going to Boston every fall and find they have exactly the same trouble there to contend with. Usually in the fall grass has given out and the farmers begin to feed green corn planted for silos and the cows get sick, and they have an extensive epidemic of diarrhoea which they cannot explain, and with all their wonderful laboratories they have failed to work out the cause. Boil the milk and reduce the fats in summer and we will not have so much trouble.

THE TREATMENT OF TRACHOMA WITH BULGARIAN BACILLUS CULTURE.*

By J. P. Crawford, M.D.,
Nashville.

I shall not detain you long with this paper, as the most of you have probably seen my paper published in the State Journal last year.

I am very much pleased, through the kindness of Mr. Armstrong, the Superintendent of the Tennessee School for the Blind, to be able to present some of the cases to you today. The cases here speak for themselves and leave little to be added by me.

In the past two years I have treated twenty cases of trachoma in the school and one private case, all in the second and third stages of the disease. Nine of the cases shown here have had no treatment with the B.B. culture since early last spring, and none of them show any tendency to relapse. Of the other six cases presented here, four entered the school in September, 1916. The

*Read before Section on Ophthalmology and Otolaryngology at annual meeting of Tennessee State Medical Association at Nashville, April, 1917.

other two cases were treated last year and were of the large shelving or overhanging variety, and at the close of the school both cases were markedly improved. They probably should have been given the treatment to use at home, but I was anxious to see what their condition would be when they returned in September, 1916, and therefore did not give them any treatment to use during the summer. That is a period extending from June 1 to September 1, 1916. They both reported that they had had very little inconvenience, and to all appearances, there was very little change in their condition. On their return we began the B.B. culture twice a day. The condition began slowly to improve, but not as rapidly as the new cases, and about the middle of January I everted the lids of the little boy pointed out to you, and opened a few of the granules and squeezed their contents out with the Knapp roller forceps, being careful to do as little trauma as possible, and only with the view of facilitating the entrance of the bacilli into the diseased tissues. I then ordered the B.B. culture to be continued twice a day. The boy began at once to improve with the results you see today. In the case of the girl, his sister, the granules were opened and contents squeezed out about February 20, 1917. The B.B. culture was continued as in the other case. Both of these cases showed rapid improvement after the partial expulsion, and neither of them missed a single class or any other of their duties at the school.

The four cases that I am unable to show you are no longer in the school, and I have been unable to get in touch with them, as they all live out of the city. However, two of the cases were considered cured last year, and we had not been using the culture for some time before they went home. The other two cases, while not entirely well, gave every promise of an ultimate cure, if the treatment could have been continued. The private case was improving under treatment, but I am unable to report further on him, as he, too, took "French leave."

The first thing to be considered and to strive for in any line of treatment is to pre-

serve as much of the normal tissue as possible. With this idea in view it becomes our duty to our patient to avoid any operative work, unless we can thereby very much shorten the course of the treatment and not materially add to the scar tissue and other sequellae, which we necessarily get in all the trachoma cases. In my experience, the B. B. culture will cure the vast majority of these cases and with less scar tissue. But where the granules are large and numerous and do not readily yield to the treatment, the granules should be opened and their contents squeezed out. Then continue the B.B. culture and you will materially shorten the course of the disease, without adding much by the operation to the sequellae.

In all cases I have the patient bathe the eyes several times a day in hot water. As the case improves, I use the culture once a day. After the granules disappear, the conjunctiva will have a velvety appearance. I then discontinue the B. B. culture and use a ten per cent solution of argyrol, or some of the other albuminous silver salts, once a day. Continue hot water and add saturated solution of boracic acid several times a day. In case of cloudy cornea or pannus, I use dionin solution, one drop every other night. In no case do I believe we should use the Knapp roller forceps, as we have all been accustomed to do in these cases. In fact, I think we could get quite as good results by using an ordinary pair of dressing forceps to expel the contents, in case we did not have the roller forceps.

There is another feature which we must not lose sight of, and that is the simplicity of the treatment, as well as the freedom from pain. Our patients will no longer dread the treatment as heretofore and rather suffer from the disease than undergo the more severe treatment. I do not think there is any greater danger from iritis with the use of B.B. culture than in any other line of treatment, and while I have had a few cases of iritis, atropine and the usual remedies, as a rule, quickly controlled it, and I have only used atropine when indicated. I have had no experience with the liquid preparations, though it is claimed that the bacilli are more

active in a liquid medium. My results have been so satisfactory with the use of the powder, I have been content to have some one else try out the liquid culture.

I do not hesitate to advise that the general practitioner, and especially those living in the rural districts, should use this treatment, taking the precautions as outlined in my former paper. While I am not yet ready to make the claim that this is a specific for this disease, yet when we consider that there has not been a single failure out of the forty-one eyes treated, it is, to say the least, significant and not beyond the possibilities. I know of no so-called specific for which we can claim any better record thus far. The scar tissue and other sequelae will preclude any doubt or question of the diagnosis of any of the cases shown.

Now, in conclusion, Mr. Chairman and gentlemen, if what I have been able to demonstrate here by these cases secures the endorsement of this Section, you will give this treatment an impetus that no single individual would do, and with the universal adoption by the profession, we will, I confidently believe, conquer a disease that has baffled the skill of the medical profession throughout all the ages.

INFLAMMATION OF THE CONJUNCTIVA RESEMBLING TRACHOMA.*

By C. J. Broyles, M.D.,
Johnson City.

The only diseases affecting the conjunctiva that resemble trachoma to any important degree are the follicular, vernal, phlyctenular and chronic catarrhal forms of conjunctivitis; and in some of these the resemblance is remote.

Of these, the most important is folliculosis, sometimes called follicular trachoma. This is probably the most frequent or common of all eye diseases, and appears to de-

velop in children possessing what might be termed the adenoid habit. It is distinguished from trachoma by the roundish, transparent or yellowish, well-defined bodies of smaller size, systematically arranged in rows, with a tendency to remain discrete, and are always larger and better defined in the lower fornix. It is not confined to the homes of the poor, or to those with unhygienic surroundings, but is found, probably as frequently, in the children of the well-to-do; and in the country, with its air and sunshine, as in the city; and sex and age seem to have no influence on its development, aside from the conceded truth that it is regarded as an expression of glandular enlargement, more apt to occur in childhood and youth.

Some authors claim that it may be caused by the prolonged use of eserine, or by impure solutions of atropine, or by the use of dry atropine. Such an influence has not been claimed for these drugs in the production of trachoma. It is said to arise from so varied a list of excitants that it might be termed, not a distinct entity, but only a symptom.

Complete cure is to be expected, though it is very persistent and rebellious to treatment. But the tendency is to final recovery, even without treatment, and that without sequelae of any kind. This is where folliculosis is so positively distinguished from trachoma, which is frequently confused with it; in that the latter always leads to permanent and disastrous changes in the conjunctiva, if left unhindered. The drooping lid, so characteristic of trachoma, is not seen in this affection. Various drugs and procedures have been resorted to for the cure of this rebellious malady. Generally, in order, come the silver nitrate solutions, boric acid, copper sulphate or alum crayon, the roller forceps, and, finally, gratage—the latter two probably giving the most promise.

Some authors claim that complications may arise and that true trachoma and pannus may develop, but that is likely an independent infection and not a sequel.

This disorder is greatly aggravated by ametropia, and refractive errors should be corrected. This advice applies to all cases of refractive errors, however.

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Vernal conjunctivitis is a rare disease, even men of large experience seeing it infrequently, but every one having his small allotment of cases. It is characterized by a stinging itching in the conjunctiva, appearing more frequently in children and in the young; hypertrophy of the conjunctiva surrounding the corneal margin, with a formation of granulations, flat in character, in the palpebral conjunctiva. There is no definite knowledge of the cause of this disease—whether or not it be of specific germ origin.

There is generally a slight ptosis, giving the patient a dull, indifferent look. Lesions may occur in the tarsal or palpebral regions, or both. While the disease is common in Southern countries, it may extend far into the North. It occurs among all classes of society and in persons of all occupations; is uninfluenced by sunlight, and is not contagious, occurring sporadically. The most characteristic symptom is the excessive itching, and it persists for weeks. It is made worse by the effort to gain relief by the constant rubbing, which increases the swelling, and the eyelids can be kept open only by much effort. This symptom lasts as long as warm weather, but, like hay fever, subsides when the temperature falls to a temperate degree—say, 60 or 65, Fahrenheit—whether it be summer or winter; relief even being experienced if the patient enters a cave or cold storage room. The objective symptoms are the same, summer and winter, but the subjective disappear in the cool season. The granulations are pedunculated with fissure-like demarcations, consisting of fleshy flat growths on the surface, bluish white or bluish pink in color. They never ulcerate and pannus seldom occurs, and corneal ulcers are rare indeed. The disease heals, leaving no trace, nor any of the structures involved.

Most of the medicinal remedies that are used with benefit in true granular conjunctivitis, such as copper sulphate, silver nitrate, and various mercurial preparations, are without influence, or may even be positively harmful. Medical treatment, either local or general, has proven to be unsatisfactory and disappointing. Iethyol, followed by elinosol, is recommended for giving relief to the in-

tolerable itching. Various remedies are suggested, but are disappointing. In the tarsal type, fortunately by far the most frequent, surgery offers the most hope. In my limited experience, gratage has always been done and cure has been the invariable result.

In the phlyctenular form of conjunctivitis, one or many grayish elevations appear on the bulbar conjunctiva, near or about the corneal limbus, each appearing to be the center of an area of its own, tiny vessels radiating in all directions from it as a center. These soon break down, becoming shallow, grayish ulcers. They may extend to the tarsal conjunctiva, but are usually confined to the bulbar portion, and often the cornea is involved; the disease becoming dangerous in direct ratio to the extent of its implication. This is generally found in children from infancy through pubescence, though it may appear or continue in later life, more frequently in girls.

Authors generally distinguish between the corneal and the conjunctival form, but this appears to be an unnecessary and a superfluous distinction, as the same is said of each, even to the medical treatment, with the addition of atropine in the corneal form.

It is thought to be of constitutional derivation, and its victims are frequently of the so-called scrofulous diathesis, the tuberculous or the poorly nourished.

Like all diseases to which the eye is heir, this is influenced by unhygienic surroundings, and to an unusual degree by unwholesome diet that may bring about an intestinal disturbance. It is regarded by some authors as an ocular manifestation of eczema. It is certain that a large proportion of cases are accompanied, preceded or succeeded by this affection.

The vesicular diseases of the eye are commonly found in company with adenitis, lesions of bones and joints, consumption, otorrhea, dactylitis, rhinitis is almost always present, and adenoids are frequently associated with them. There is pain and blepharospasm; photophobia is extreme, and lachrymation is exaggerated. It is easily influenced by proper treatment, though there are rather infrequent cases that are tedious,

or even intractable. If the cornea is deeply involved, scars will surely be left, generally nebulous in degree and character.

The treatment should, because of the systemic disturbance, be largely directed to the general system and hygienic corrections and adjustments. Of course, employing a proper local medication, the chief of which is atropine and cleansing irrigations, and a carefully prepared yellow oxide salve, after the vesicles break down.

That chronic catarrhal conjunctivitis, with its chain of subjective symptoms, could frequently be mistaken for trachoma, seems impossible. Its chief symptoms are subjective, and include burning, itching, sandy feeling, dry sensation, blurring of vision, and so on. It is not partial to youth, but is fond of the mature and aged. When it advances beyond the subjective stage, and the lids and fornices, or both, become red and hyperæmic, and the membrane is thickened and blepharitis marginalis is present, or when an eczematous condition is present, and finally ectropion and corneal ulcers develop, then is the time for the inexperienced or the careless observer to err.

These diseases may frequently assume the likeness of trachoma; but if their characteristics be carefully compared; if the round, opaque, ill-defined bodies, peculiar, dirty, grayish color; if the excessive friability, feeling like semi-browned albumen; their tendency to become confluent; their preference for the upper lid; the droop of the upper lid; pannus and corneal ulcers; the structural changes in the conjunctiva which are always present; the involution of the tarsus; the universality of ages attacked; and, finally, the distorted lids and conjunctival atrophy be well considered, confusion will seldom occur.

DISCUSSION.

O. DULANEY, M. D., Dyersburg: I did not get to hear Dr. Crawford's paper, but I heard Dr. Savage make some remarks in regard to Dr. Crawford's use of the Bulgarian bacillus in trachoma and the observations that have been made here this morning with regard to the results obtained in that particular treatment I do not believe are any better than the ordinary treatment that I have seen given, and

that I give myself—i. e., that I use myself, in the regular routine work in my cases. Furthermore, I believe that there is more thickening of the eyelids in this, I believe, than any ordinary antiseptic powder, you might say, that could be dropped into the eyes, as he places this, twice a day, would be quite as effective as the Bulgarian bacillus.

Now of course Dr. Crawford has been successful to a certain extent in the treatment of these cases; but from the length of time that he has had some of them under observation and under treatment, I do not think that the treatment is any better, or that the results are any better than those obtained in the usual cases. This is my candid opinion, from the observation that I have made this morning.

Dr. Broyles has not left much for us to say at all in connection with the diseases that are sometimes mistaken for trachoma. The only thing is this—that we frequently come in contact with a great number of men who are prone to state to the patients that they have trachoma, and how easy it is for him to get well; and they advertise to cure such conditions through the mails, and every other way; and so whenever we get hold of a case of trachoma, we know that we have something more to deal with than the ordinary things that Dr. Broyles has outlined.

Now, in regard to phlyctenular and follicular conjunctivitis, I want to say this: We notice this especially in children, and from the results that I have gotten in the last two or three winters, and being backed up by pathologists, from the observation that I have made, I have almost come to the conclusion that all these cases are due—most of them, I will say, to a great extent,—are due to secondary infection, and the majority of them are of pneumococcus type. If we rely solely on the treatment of the local conditions, we will not get results that will be gratifying to us at all—but in every case that presents itself, and under the circumstances as outlined by Dr. Broyles, a careful and thorough examination should be made of the nose and throat, and also inquire into the intestinal tract, as to whether there is any disturbance in that connection or not. Unless those infections are removed, and we have a secondary condition resulting from those infections, it will be almost impossible to effect a permanent cure; of course we will have a variation of symptoms; it will improve at times, but you take the condition of low vitality coming along in these cases, as we usually have, the disease will become active and progressive, and at intervals we will think they are going to get well, when, if we would make a thorough and careful diagnosis, and ascertain the real cause of this disturbance, we would be more effective in our treatment.

DR. E. C. ELLETT: It is hard to look at these cases that you have never seen before, and without any history, and try to form any idea about the result of treatment. If Dr. Crawford expects to

convince anybody as to the value of his treatment, he has got to publish detailed histories of every one of these cases, with photographs, and records of the vision, and descriptions of the appearances of the lids when he gets hold of them, and notes on them from time to time, because, to get up and say that such and such a treatment is good, is not going to carry very much weight with it, and even when these cases are shown here, I am far from convinced that this treatment is any better than the other treatments with which we are all familiar. Now that is from just seeing the cases one time. If I could see them in the beginning and follow them through, I might come to a very different conclusion.

I think Dr. Broyles is to be congratulated on the fact that he cures all of his cases of vernal conjunctivitis. I will know what to do with mine now when they come, because I don't think I ever cured one.

The diagnosis of trachoma does not seem to me to present any special difficulties; certainly not in the large majority of cases. I recall two cases that I have had trouble with. One was a child who gave a history that sounded like ophthalmia neonatorum; he got over that, and when he was about three years old developed what looked like vernal conjunctivitis. Everybody in Memphis had a look at him, and nearly everybody made a different diagnosis. I lost sight of him then for five or six years, and he came back with undoubted trachoma which ran the usual course, with the cicatricial stage, which I do not believe ever follows vernal conjunctivitis, and which made the diagnosis seem clear. I doubt if that boy started with trachoma. I think he either contracted it, or had it presented to him in the course of his travels. The other case was one of a child about twelve years old who had what looked like follicular conjunctivitis, in that the upper lids were very slightly affected, and the lower lids considerably so; the cornea and the vision were never affected at all, and the significant thing was a droop to the upper lid, which it seems to me we so often see in trachoma and not any of these other conditions.

DR. W. LIKELY SIMPSON: There is one point I would like to mention in the discussion of Dr. Broyle's paper, and that is that we see at times in some of the more chronic conjunctival conditions a thickening and drooping of the lids, but there would not be a pannus in such cases, and usually there would not be corneal ulceration. By making smears and cultures of such cases, the bacillus of Morax-Axenfeld would often be found, and by using fluoresceine-zinc or strong solution of zinc this condition will rapidly improve. Weak solution of zinc may only cloud the diagnosis.

DR. JOHN W. MOORE, Nashville: I have come in rather violent contact, on account of some work that I have done for the Board of Education of Nashville, with trachoma, in the last several years,

and it has interested me no little, and I think it is an exceedingly important public health matter, especially in the rural districts and mountain districts, in Tennessee, Kentucky and Virginia, where a great deal of work has been done in the suppression of trachoma, as you all know, by the Public Health Service; and I am always impelled to say, when the question of trachoma arises in the Medical Association, always to put forward a suggestion that is to some extent unscientific. I have so often heard the idea advanced, in the discussion of trachoma, that it was incurable. I think I know that it is not by any means incurable, and in fact can nearly always be cured. But even if it should be said that it is not curable, I don't think that that idea should be stressed, unscientific as such an attitude might be, because certainly if these cases are kept under treatment, and you cannot keep them under treatment, of course if you put in their minds a suggestion that the treatment is not going to be productive of a cure, you will lose the valuable prevention of the daily use of antiseptics in their eyes, for the prevention of transmission to other children or other persons, and I think by the work that has been done here in the Public Schools, by which the treatment is compulsory and must be carried out quite faithfully, that we have been enabled, although many cases have proved intractable to the treatment, we being limited in what we could do, and many of them refusing operations, the most of them refusing operations, I might say, that we have held it stationary in its spread, and by our efforts at treatment have greatly reduced the number of cases. Now I think that in well defined cases of trachoma, certainly operation should be done in all cases. I am not acquainted, except through Dr. Crawford's report, with the treatment with the Bulgarian bacillus, because I have never tried it myself. I think that outside of operative interference, the other means that we have at our disposal are eminently satisfactory, although without operation in the vast majority of the cases they are not satisfactory at all—no medical treatment that I have seen.

G. C. SAVAGE: It was my privilege to see Dr. Crawford's work, as he does it out at the Blind School. I think it is fortunate that he has under his absolute control so many patients suffering from trachoma, while he is working out this problem of treating that disease with the Bulgarian bacillus. Those of us who have seen the cases cannot be other than convinced that the treatment does good. The treatment, however, it seems to me, has to be carried out under conditions something like the doctor has under his control at the Blind School. I saw some of those cases that were exhibited here this morning, when their corneas were pannused, badly pannused, and now they are clear, several of them. The treatment can not be put into the hands of the patient, and thus get out from under the observation of the man who is carrying it

out, and chiefly for the one reason that I think the doctor must have emphasized in his paper, and that is the danger of the complication of iritis. I know, and you know too, that when iritis is developed from a Bulgarian bacillus, that it might be as severe as if developed from some other cause, and might become more severe, and that complication should always be looked for and should be guarded against.

I am not sure but what the fact that this one of the dangers of his method of treatment is a good thing, for I believe that in the use of atropin he has a helpful agent in the management of these cases. Of course we do not always use atropia in our cases of trachoma, but I am pretty sure that whatever method of treatment we might be carrying out, that the atropin would render us aid. I have used the Bulgarian bacillus. I have not use it is extensively as Dr. Crawford has; I have not used it as long, or in as many cases as he has used it, but I recall a few cases that got along well under its use, and I did not use it twice a day either, because it was not convenient for such patients to come to the office that often. I think I used it only about once every two or three days. But I did that for two reasons: One was that I did not want the patient to be put to so much trouble in coming to have the applications made; another was to see whether or not less frequent use of the agent might not be about as effective. In my mind I can see a picture of some of these cases. They were old, pannused, and had dread of light, and all that sort of thing; they got along well, and I am inclined to believe that practically all the cases in which I administered the treatment, would have done well, if I could have kept them under observation and could have seen them only three times a week. Some of the cases in my practice come from outside the city, and they could not stay, and I would not be willing to prescribe the Bulgarian bacillus and let it be used at their homes, even under the observation of the family physician, so that I never, except in my office, treat the old cases of trachoma with the Bulgarian bacillus.

I have asked my friend Crawford to use his influence over the manufacturers of this agent to get them to make a solution, and not a powder. We know that we have solutions of the Bulgarian bacillus, and we know how unstable it is, and we know that those solutions are all in bottles of considerable size. The samples I have seen are of two ounces. Before you could use two ounces, unless you had a number of patients under treatment, the thing would get too old, and that is a waste. If the solution could be put up in drachm vials, and could be used in the form of a solution, I believe it would be a convenience, and probably better than to use the powder.

One word as to vernal catarrh. I am glad that I can say that my experience has not always coincided with that of my friend Ellett, who, I be-

lieve, said that he had never cured a case. Is that correct?

DR. WILLARD STEELE: I would like to ask Dr. Crawford what is the virtue of the Bulgarian bacillus as used. Is it the powder, or bacillus, or lactic acid? Does he know in what the bacillus is incorporated?

DR. N. C. STEELE: The subject under discussion is not trachoma, but the use of Bulgarian bacilli in treatment of trachoma.

In the cases I examined here this morning I observed that atropin was being used freely. In cases involving the cornea, if you will use atropin it does not make any great difference what other drug you use. I mean of the drugs usually recommended. Of course I do not depend on atropin alone, but think it probably the most important single remedy. Atropin and the Bulgarian bacilli seem to have acted well in Dr. Crawford's cases. At least I do not see ground for adverse criticism.

DR. E. C. ELLETT: I just want to refute one statement, namely: that none of these cases get well. I have one patient, a trained nurse, whom I see occasionally, and whom I treated for acute trachoma several years ago. She is absolutely well, and you could not examine her eyes and tell that she had ever had anything the matter with her.

DR. DAVIS: Any deformity left?

DR. ELLETT: No sir.

DR. CRAWFORD, (closing discussion: Of course in writing that paper, I simply outlined the conclusions I have come to in the past two years. Now I have only brought those cases up here to take you into my confidence. These cases were presented to the Academy of Medicine, four of them, about last March a year ago. They were later presented in May, to show the results, and now they have been presented here.

As to the treatment of trachoma with Bulgarian bacillus, there is not a doubt in my mind that it is going to be a success; the only question is to get the profession to begin to use it. Now these cases have been under my charge, some of them, for three or four years, and I have had a great many of them out there, under the old line treatment, and if there is any man that can cure a case of trachoma in the second or third stage I ought to be able to do it,—not for my own self anything that I do above what anybody else would do—but these cases are there, they had to be treated, and I have had a capable nurse—that young lady who was here is a very capable woman, and interested in her work—and those cases received the treatment; until now I mean in the old line treatment, and I want to say to you that I have never had the results in the old line treatment anything like I have had in the Bulgarian bacillus.

DR. ELLETT: What do you mean by the old line treatment?

DR. CRAWFORD: I mean the bluestone and silver preparations, the recognized treatment that has been used for years and years.

DR. HUFF DAVIS: I want to ask for the rationale of that treatment.

DR. CRAWFORD: I will get to that in a minute. Now the question comes up as to the result. We know—at least we are told by the manufacturers,—and we have, of course, every reason to believe—that these bacilli produce a free lactic acid. I am not sure—in fact I don't know—but I have worked on the idea, that it is either the direct action of the bacilli on these granules, or it is the free lactic acid that produces the results. I am not in a position to work that out myself. But I can say that in these cases after a week or ten days you will find—and as I said in my paper, before—little holes or pits, like small-pox, underneath the conjunctiva, and that was the first thing that made me continue the treatment. And so far as the atropin is concerned, I only use the atropin when it is called for, for as indicated by irritation and other conditions. I do not believe atropin *per se* has any effect whatever. It is only in some of these cases. We haven't used any atropin throughout the course of treatment. Some of them, of course the majority of them, because I have been using in a few of these cases, when I did not mention in my paper, I have been using some dionin once every other day, and using argyrol now; but some of these cases have not had any bacilli in a year. The case of the boy that sat down here. Danger of iritis: I was at first afraid that we probably would have a tendency to iritis, but my experience has not been so. I do not believe I have had any more iritis than I had before; and furthermore, so far as the danger of using this remedy, I do not believe there is any more danger than in any other remedy that we can use; and I believe, furthermore, that it can be put in the hands of the general practitioner—I mean these cases where they are out in the rural districts and are not able to get to an eye man, that the general practitioner can treat these cases without any danger whatever. The only thing he has got to remember, as I cautioned in my first paper, was, to use atropin in all cases, except with the eye men, I would advise that the atropin be used in all cases. Of course a man who is in this special line, I think he ought to use his own judgment about the atropin,—in any case, for that matter. And I believe that eventually the treatment is going to turn out just as I claim it will do, if the men will take hold of it and use it.

Now, if you could follow these cases—and I am sorry that some of the men who saw these cases before, and have followed them up to a certain extent, did not see them to-day, and did not have any remarks except Dr. Savage. As I say, I have treated, and have gotten results in the old line of treatment as good as any man has ever been able to get,

and yet I am frank to say that I have never received the benefit from the treatment as in these cases. And it is much simpler. Your patients do not suffer. You saw the powder in some of the cases here to-day, and that is all the suffering they had, every bit of it, from the start to the finish. If you do a grattage, or if you do a roller operation—the grattage I would not think of doing in these cases, but if you are doing a roller operation, as I have done, and immediately put the powder on and the child will sit there with the eyes closed a few minutes and open up; now they do not suffer at all, and it is the pleasure that I have gotten from treating these cases, since it has been presented to me, that reconciles me to the rebuffs I have had to stand. I don't blame you for being skeptical. The only plea I want to make is to try out the remedy. If Dr. Savage is afraid to use it, I would not hesitate to do it, and say to you to put it in the hands of your patients. If necessary I would rather have the Bulgarian bacillus in the hands of my patients than to put any of the sulphate of copper, or any of those solutions in their hands that it has been the custom to put into the hands of patients, to use at home with little fear—with much less fear than I would one of those other remedies. And so far as the question if these cases are curing, I believe some of them are, and all will be cured. I have been keeping up this irritation because I have been trying to clear up the cornea; and all the patients do improve from the beginning, but I have been keeping up some inflammation; they don't look as well as they ought to do, from the fact that I have been using these continued treatments on them in order to clear up the cornea. The only question is if the men will try it out, eventually we will all come to it, and I believe that firmly.

DR. CHARLES HUFF DAVIS: Dr. Steele has asked my question. Those of us who have had to treat trachoma have seen our cases, exactly as these same cases, in exactly the same state of repair as has been demonstrated to us today. Our cases are apparently quiet and then up again, apparently in the spring and fall seasons. I made this observation in Knoxville at the State meeting there. I believe then that Dr. Ellett stated that he had never observed such a thing. I am interested in knowing the rationale of the treatment with Bulgarian bacillus. What is its specificity in this disease? With my knowledge of it, it seems to be as reprehensible as any gunshot vaccine, and I don't see what you are shooting at. Now arises the question of iritis. Is iritis an inflammation? If it is an inflammation, it is an infection. Is the Bulgarian bacillus you use sterile or not?

One of the best things in the world in the treatment of trachoma is to have entire control of the patient. I believe cases where you have a great many under your absolute control and daily observation can report just as much prog-

ress, possibly, as these have reported. I am not quite convinced but that the ideal condition of cleanliness, sanitation, proper food and the continuous irrigation has not done quite as much for these cases as has the Bulgarian bacillus. Certainly nothing is claimed for the Bulgarian bacillus in eliminating the opacities of pannus.

I am interested in knowing whether or not these cases come from East Tennessee. We have, out of Illinois and Southeastern Kentucky, about the biggest trachoma district in the United States. I claim more or less responsibility for establishing the hospital for treating these diseases, in Tazewell, Tenn. The treatment there resolves itself into a uniform treatment, and they will tell you that it is mostly surgical. Whether or not trachoma is curable is a question. If you consider deformity as a cure, like a man who sets a fractured leg and it results in a deformity, then it is a cure. Each acute attack renders a certain amount of deformity that is permanent. Now from that point of view it is never cured.

DR. BROYLES, (Closing): Mr. President, and gentlemen: I am sorry that I did not get to hear Dr. Crawford's paper. I am very much interested in his patients that he so kindly presented. I have never had any experience with that treatment. I hope that the Doctor will be able to establish it as a really helpful remedy or absolute cure. I believe it was our Chairman who said that he has never seen a case of trachoma cured. I believe I have; I believe I have cured it. I don't mean very often, but I have seen really well cured cases if you can call a period of several years a cure. I have seen the usual remedies used for weeks and months without much relief. I have seen the drooping lid develop early. Dr. Roberts wants an early symptom; sometimes that is really an early symptom, appearing within a very short while after the inception, or at least after your discovery of an acute disease. Now, I have seen Fox do scores of the grattage operations. You know, Dr. Savage, that he is rather partial to it. I have seen cases, and seen them afterwards on subsequent visits to his place, that have remained well for months and years. I have had a good deal of success in my circumscribed field with sulphate of copper solution. I am not the originator of that particular method of using it. I forget where I read it, but in some journal; to take thirty grains of chemically pure sulphate of copper, dissolve it in one ounce of pure glycerine; that makes a permanent solution.

DR. SIMPSON: Prince.

DR. BROYLES: Yes, I believe it was Prince, of Illinois.

DR. SIMPSON: Fifty grains to the ounce, Princee has it.

DR. BROYLES: Well, I made it thirty. I would instruct the patient, as he did, to dilute it in twenty drops of water to start with, putting it in three times a day, gradually increasing and probably

making it a drop or two stronger from day to day, until finally they would almost use the solution itself. I did that really as a *dernier resort*. I was tired of the case. It was sent off, and I would instruct him to return whenever he felt disposed, anywhere from a week to a year, whenever he got ready. I have seen several cases return cured. It is true that they had had tarsal atrophy, but I would rather have atrophy than trachoma myself, because if you have trachoma long, you will have it anyhow. I am sorry that I did not hear the paper, and I hope we will have fine results from ply a synopsis of observations on the diseases relative to the Doctor's experimentation. My paper was simulating trachoma. Dr. Ellett says that he has never seen a case of vernal catarrh cured. I have seen several cases done by Fox that he said were cured: they looked to me like they were cured, as they had no subjective or objective symptoms, and the change took place immediately after the operation, and was permanent.

But I can relate in just a few words one special case. As I say, I have never had many cases: few of us have very many cases, fortunately. But this patient had been treated in various towns by various doctors, and I treated him one season myself. Finally I decided that I would do a grattage. The boy had suffered intensely, almost crying with his itching, for years, in the summer time, or a warm spell in the winter time. I did that, and the symptoms immediately subsided, and he got entirely well, without a lesion or a scar or an atrophy, or anything to indicate that he had ever had any trouble with his eyes. And he remained that way until he was unfortunately killed by the train.

But I would suggest that Dr. Ellett (he has left the room) learn how to cure that; then he will see some cured cases. Thank you, gentlemen.

AFLOAT AND ASHORE.

Two new products which are attracting unusual attention, both in this country and abroad, are Chlorazene (Abbott), Dakin's new antiseptic, and Parresine (Abbott), the improved, hot-wax dressing for burns. Both of these remedial agents have been passed by the Council of Pharmacy and Chemistry of the American Medical Association, to appear in their "New and Non-Official Remedies," and have been ordered by the United States Navy to be placed on every ship.

The results which are reported by surgeons and hospitals in the use of Chlorazene and Parresine are so remarkable that it would surely pay every physician to become better acquainted with these products.

Literature will be sent on request to The Abbott Laboratories, Chicago, Illinois.

OUR NEW PRESIDENT



EDWARD T. NEWELL, M. D.

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EDITORIALS**EDWARD T. NEWELL, M.D.**

Dr. Edward T. Newell, elected President of the Tennessee State Medical Association at the last annual meeting, was born at Newellton, Louisiana, and received his early education in the schools of his native town and in the University of his native state. He graduated with a B.S. degree from the Louisiana State University in 1896 and in the same year entered the Medical School of Tulane University, from which he received his M.D. in 1899. After two years at the New York Post-Graduate Medical School and Hospital, from which he secured a diploma, Dr. Newell entered the practice of medicine in St. Joseph, Louisiana, from which place he removed to Chattanooga. With Dr. E. Dunbar Newell, his cousin and associate in practice, he established the Newell and Newell Sanitarium in Chattanooga and in this institution has made for himself an enviable record as an efficient surgeon.

Dr. Newell has been identified with medical organization in Tennessee throughout the time of his residence in the state and has, moreover, been an active and aggressive worker for the promotion of every interest of the profession as it could be effected through medical societies. In his local society, in the East Tennessee Medical Association, and in the State Association Dr. Newell has taken an active part and has made for himself a great many warm friends in the profession of the state. He has warned the editor of the Journal not to print any fulsome praise of him and has been very backward in furnishing any statement concerning his life and work which might be used in this sketch. We therefore present this very modest little article about our President

for 1917 with an expression of our most sincere belief that the many excellent qualities of mind and heart which have endeared Ed Newell to his many friends and which have enabled him to make for himself a place among the leading surgeons of the state, than which there are none better, will also help him to acquit himself with credit in the capacity of the chief officer of the Tennessee State Medical Association.

OUR PRESENT MEMBERSHIP.

Up to May 20, 1917, there have been recorded 1,434 names on the membership roll of the Tennessee State Medical Association. This is about ten names less than the roll showed on the same date last year. This won't do. We must grow greater, not smaller.

Anderson county had 13 last year as against 10 this year; Bedford had 22 last year and has reported only 17 this; Blount has more than doubled her 1916 membership; Bradley has 9 now and had 9 on May 20 last year; Coffee has lost 2; Campbell has only 16 against her 24 in 1916; Carroll needs 5 more to equal her 1916 record; Chester has dropped from 8 in 1916 to 3 in 1917; Coeke has come in new this year with 10 members; Crockett has done splendidly, having 12 times as many members this year as were reported last year (only 1 was reported); Cumberland has 4—all there are to have; Davidson has gained 18 over 1916, when 125 were reported to May 20; Decatur, a new county last year, has gained 1, having 8 in all; Dickson has picked up 2, having now 14; Dyer is 5 behind last year, when 37 were reported up to May 20; Fayette has also lost 5, now having 12 in all; Franklin has gained 1, with a total of 12 registered; Gibson is 3 behind 1916 with 25; Giles has 24, just 1 less than in 1916; Greene, with 24 members, is 2 behind the 1916 record of May 20; Grundy has 7 members now as against 9 on May 20 last year; Hawkins, brand-new last year, has 2 more than last year with 14 enrolled; Hamblen has 17, having picked up 2; Hamilton shows a loss of 18 with her present enrollment of 73; Hardeman had 16 last year, but has only 12 now; Hardin has come in with 9;

Haywood needs 1 more to make her 9 of last year; Henderson must get one to catch up to her 27 of last year on May 20; Henry has 17 now against 15 at the same time in 1916; Hickman has just what she had—7 members; Jackson has lost 5 from her 13 of last year; Jefferson has fallen off 4 from her 16; Knox must hustle up 16 more men to equal her enrollment of 113 of May 20, 1916; Lake is even with 8; Lauderdale, with 27, is 2 ahead; Lincoln, with 24, is 2 behind; Loudon needs 2 more to make up her 10; Macon had 7 and still has them; Maury had 35 and now has but 30; Madison, with 32, is 5 ahead of the same date in 1916; Marshall has added 2 to her 23 of 1916; Monroe shows her faith in the luck of 13 by having 2 more than in 1916; but 13 brings no luck to Montgomery, for she had 14 last year; Morgan has quit and thereby we have lost 4; McMinn has also quit, it seems, and so 12 more are unaccounted for; McNairy had 18 last year, but has 4 less now; Obion is 3 ahead of the same date in 1916, when 21 were in; Overton, with 6, needs 2 more; Polk has kept an even keel with 10 to 10; Putnam needs a good dose of something, for she has fallen from 12 to 7; Rhea needs a rejuvenator, too, for her 12 of 1916 has come down to 8; Roane, with 17, has made an even break; Robertson has cut her 20 of 1916 just half in two, now having only 10; Rutherford had 24 on May 20 last year and has put in 3 more for 1917; Scott has held on to her 9; Sevier has lost 4 of her 1916 8; Shelby had 183 on May 20, 1916, and now has 209, just one more than her total enrollment for 1916—and that's "going some"; Smith, with 17, has gained 1—a Smith habit; Sumner has done well by putting 4 more to her 9 of last year; Sullivan-Carter-Johnson has 37 now, but she had 45 at the same time last year; Tipton needs 1 more to equal her 21 of even date in 1916; Unicoi was out last year, but is in now with 6; Wayne "gave up the ghost" after one short year and so we lose 6 good men; Warren has 6, a gain of 1; Washington has put 30 on the 1917 roll as against 27 at the same time last year; Weakley "stands pat" with 14; White has only 11 of the 15 of last year; Williamson has lost 1 of her 15; Wilson believes in the magic 13,

too, having taken on 2 to make it; and that's all.

There's the record for you. What are you going to do about it?

Let's get 'em!

LETTING THEM DIE.

Suppose you were told that thirty babies less than one year old died in one county last year and that eighteen of them died without having received medical attention at the hands of a physician? Would you believe it? It's a fact.

Suppose you were told that in thirteen counties—as good as can be found in this or in any other state and with a medical profession as well equipped and as competent as can be found in any like territory—one hundred and forty-nine of the six hundred and sixty-eight babies who died under two years of age in 1916 died without medical attendance. Would you believe it? It's a fact.

Suppose you were told that in this same territory only ninety-eight persons over two years of age died without medical attendance, leaving out those who died violent deaths, those who died suddenly from natural causes, and all old persons whose age was a prime factor. Would you think that the babies had been given a fair chance for their lives?

The facts are as given. Five hundred and thirty-six babies less than one year old died in thirteen of our very best counties last year, and one hundred and thirty-two less than two years of age. Of these, just 27.3% died without having had the benefit of medical service. Why?

One hundred of the five hundred and thirty-six infants under one year old who died were prematurely born. Why?

Fifty-three of the five hundred and forty women of child-bearing age who died in the thirteen counties in 1916, practically 10%, died from causes associated with childbearing. Why?

Of these fifty-three deaths, fourteen or 26.4% died from puerperal septicaemia. Why?

Four and thirty-five one hundredths per

cent of all births reported in Tennessee are stillbirths. Why?

There are many things involved in the answers to the "Whys?" proposed and the Journal would be glad to have them presented for publication by any of the members of the Association who would like to answer the questions. The records of the thirteen counties are just like the records of the other eighty-three, so answers may come from any section of the state.

Whatever the reasons for conditions as they are found, one thing is certain and that is that the medical profession of Tennessee should and will undertake to change the record for the better.

TRACHOMA HOSPITAL AT TAZEWELL.

The U. S. Public Health Service, at the request of Dr. R. Q. Lillard, Secretary of the Tennessee State Board of Health, and with the co-operation of the Board is doing fine work at the hospital established for the treatment of trachoma. This hospital, housed in a building provided by the public-spirited citizens of Tazewell, was established several months ago and is under the immediate direction of Dr. J. L. Goodwyn. Dr. Jno. McMullen, Surgeon U. S. P. H. Service, is in general charge of the trachoma work of the Service in Tennessee and Kentucky. Three nurses are employed. Up to May 1, 1917, 15,153 treatments have been recorded and splendid results are reported. In addition to the great good accomplished through the treatment of this widespread disease which has played sad havoc in so many mountain homes, a splendid work is being done for the education of the people in the prevention of trachoma. The Secretary of the State Board of Health is to be commended for his action in securing the establishment of the trachoma hospital and the U. S. Public Health Service and its representatives, Dr. McMullen and Goodwyn, have earned the gratitude of the people of the state for their humane and scientific work for the relief and control of the dreadful disease which so sadly disables its victims.

The service of the Tazewell hospital is free to the citizens of Tennessee. Already a num-

ber of persons from Middle and West Tennessee have been treated in the institution and many more will go. Thus the educational work of the hospital will be made to tell throughout the state.

TENNESSEE HOSPITAL UNITS.

An hospital unit, composed of twelve of the best of Nashville's medical and surgical profession has been organized to represent the Vanderbilt School of Medicine and it is expected that this unit will shortly see service behind the battle line in Europe. Drs. W. H. Witt, A. W. Harris, H. M. Tigert, W. M. McCabe, W. C. Dixon, T. G. Pollard, W. G. Kennon, J. O. Manier, E. M. Fuqua, T. D. McKinney, Robert Brown, and R. A. Barr, Director, compose the Vanderbilt Hospital Unit. In this body of men is represented the very best in Tennessee medicine.

Under the directorship of Dr. Battle Malone, The School of Medicine of the University of Tennessee has also organized an hospital unit. The Journal is not informed as to the personnel of the organization, but is very sure that the men who compose the unit will be of the kind which Tennessee always sends to the front—the best there are.

May the God of Battles preserve the lives and strength of all our friends and professional brothers wherever they may be called, in order that they may give the full measure of splendid service of which they are capable and that they may return safely to their families and to their places in the practice of medicine and surgery in Tennessee.

DR. D. M. PEARCE.

Dr. D. M. Pearce died at his home in Union City on May 22, 1917, at the age of 81 years. Until this year Dr. Pearce was an honored active member of the Obion County Medical Society and the Tennessee State Medical Association. Because of his inability to attend meetings he did not renew his membership in his local society this year.

Dr. Pearce was greatly loved by hundreds of friends whom he had drawn to himself in the many long years of his professional service and was held in fond esteem by the phy-

sicians of his section. He was for many years one of the best known and busiest practitioners in West Tennessee, but always found time to take an active interest in whatever concerned the welfare of his people.

SUPPORT OF DEPENDENTS.

In the Official Bulletin, issued daily by the Government, the Council of National Defense has published the following question submitted to the Council and the answer:

“Question. Will the Federal Government undertake the relief and support of dependents of doctors and others who may be sent by our Government across seas for service as civilians or attached to some branch of the service of the allies?”

“Answer. The policy of the War Department in this regard is as yet undetermined, because Congress has not yet completed its consideration of military legislation. In general, it may be said that the department desires, at the outset, to exempt from military service, as far as possible, those having dependents. Realizing that this cannot be done in all instances, the department has requested Congress to provide an adequate sum to take care of the dependents of such as can not be so exempted. Doctors who are sent across the sea will be commissioned officers of the Army, and the pay allowed by law is, by the department, deemed to include adequate provisions for their dependents.”

The above appeared in the Official Bulletin under date of May 21, 1917.

NOTES AND COMMENT

School Improvement Associations of Bristol will employ a visiting nurse.

The Hosmer Hospital at Dyersburg will hereafter be called the Baird-Dulaney Hospital.

Dr. Jno. W. Morris, Fayetteville, has joined the Medical Service of the Army and has been ordered to France.

Dr. R. W. Billington, Nashville, has gone

to England with a company of orthopaedists for service in war hospitals.

Dr. E. C. Ellett, Memphis, as a member of the Medical Reserve Corps, U. S. A., has been detailed for service at Memphis.

Drs. Joel J. White, Jno. A. Turner and Thos. D. Baxter, all Vanderbilt alumni, have been accepted for the Medical Service in the Navy.

Drs. E. H. Baird and R. L. Motley, of Dyersburg, are spending the month of June in clinics at Baltimore, New York, Chicago, and Rochester.

Dr. Herman Spitz, Nashville, is spending the month of June at work in the pathological laboratories of Cornell and the New York Post-Graduate.

The sanitary training detachment of the Knoxville Red Cross is under the command of Dr. S. R. Miller, with Dr. W. N. Lynn as Assistant Commander.

Drs. Perry Bromberg, A. L. Sharber, Howard King, W. D. Haggard, C. N. Cowden, and R. E. Fort, all of Nashville, attended the New York meeting of the A. M. A.

Dr. T. J. Coble, of Shelbyville, has what Dr. Frank Reagor calls a “tin Lizzie” fracture, the result of a tussle with the starting end of his transportation apparatus.

Dr. E. E. Northeutt has removed from McMinnville to Morristown. Dr. Northeutt served as Secretary of the Warren County Medical Society for a long term of years.

Drs. Jesse B. Naive, Norman King, J. A. Fountain, T. H. Sharp, N. A. Bryan, M. F. Hudson, W. S. Harmon, and R. P. Henderson, of the '17 class of the Vanderbilt School of Medicine, have been accepted for service in the Navy.

The Journal has received no reports of the meetings of the West Tennessee Medical As-

sociation and the Upper Cumberland Medical Society, which were held in May at Martin and Cookeville, respectively.

Dr. E. L. Bishop, District Director of the Bureau of Rural Sanitation of the State Board of Health, is at work in Maury county and reports that he is also receiving the active co-operation of the physicians.

Dr. Scott Farmer, Superintendent of the Central Hospital, attended the meeting of the American Psychological Association in New York and then visited some of the institutions for the insane in Eastern states.

Dr. W. S. Rude, of the Bureau of Rural Sanitation in the State Board of Health, is conducting a three months' sanitary campaign in White county and is receiving the hearty support of the physicians of the county.

The Illinois State Medical Association, The Medical Faculty of Maryland, and other state organizations have taken steps to preserve a part of the incomes of physicians who are not called to the colors for the use of those who go to serve in the Army.

Drs. F. J. O'Connor, W. T. Fitts, W. G. Saunders, B. C. Arnold, F. B. Hamilton, Jesse Rains and J. W. McLaran compose the Jackson contingent offering for the Medical Reserve Corps.

The Journal is informed that five Smith county physicians—Drs. R. E. Garrett, R. E. Key, J. H. Chism, C. D. Robbins and L. D. Cotten—have offered for the Medical Reserve Corps.

Drs. E. R. Hall, H. B. Schoolfield and Louis DesPres, all of Memphis, and Drs. Henry Douglas, T. J. B. Givan and W. B. Goddard, all of Nashville, have gone to France for Red Cross service.

Drs. B. L. Browning, W. E. Bryan, H. W. Harris, J. J. Hendren, L. B. Marshall, W. B. Norris, C. G. Terrell, and R. H. Lee, all of

the '17 class of the University of Tennessee School of Medicine, have been accepted for service in the Naval Coast Defense Medical Corps.

Dr. J. A. Witherspoon attended the annual meeting of the Texas State Medical Association in May and had high honor shown him. He delivered an address before the Association, conducted a clinic, spoke before the Vanderbilt Alumnae Association, and was the principal speaker at a great public meeting arranged by the State Medical Association.

The Highland Sanitarium, three miles from Nashville on the Murfreesboro Road, has been opened for the treatment of mental diseases and drug addiction. Dr. A. E. Douglas, former Superintendent of Central Hospital, is in charge of this new institution and has surrounded himself with a splendid staff of consultants.

Dr. W. E. Cooper, U. S. A., who was detailed for lectures before the classes of the Tennessee Medical Schools during April and May, has been assigned to duty with an engineering corps which will be sent to the front soon.

The Victor Electric Corporation has found it necessary to enlarge its already large facilities for the manufacture of X-ray and electro-therapeutic equipment. Thus is illustrated the recognition by the profession of the immense value of electric apparatus in diagnosis and treatment of disease. Our Tennessee men, by the way, are equipping themselves with the best.

SOCIETY PROCEEDINGS

MIDDLE TENNESSEE MEDICAL ASSOCIATION.

The Middle Tennessee Medical Association met at Fayetteville on May 17-18 in regular semi-annual session. The Secretary, Dr. Jack Witherspoon, had prepared a most excellent program, the profession of Lincoln county had anticipated every possible want of visit-

ing members, the weather was fine, most of the essayists were on hand, with good papers, too, discussions were prompt, lively and full, a splendid attendance was had, and everybody had a good time.

Dr. B. T. Nolen, Franklin, was elected President, Dr. W. F. Cannon, Bellville, was made Vice-President, and, of course, Dr. Jack Witherspoon was re-elected Secretary. The next meeting of the Association, in November, will be at Tullahoma.

EAST TENNESSEE MEDICAL ASSOCIATION.

The regular semi-annual meeting of the East Tennessee Medical Association was held at Dayton on May 17-18. About seventy East Tennessee doctors were on hand—about half the usual number. Dayton is somewhat "out of the way" for many of the members, hence the reduced attendance. The entertainment offered by the Rhea county profession was in the language of one of the entertained, "simply splendid."

The next meeting will be at Johnson City in October.

Dr. J. M. Clack, Rockwood, was made President; Drs. W. P. McDonald, Spring City, and E. T. West, Johnson City, were selected as Vice Presidents, and Dr. W. N. Lynn, Knoxville, was retained as Secretary.

BEDFORD COUNTY.

The Bedford County Medical Society, the May meeting of which was postponed for a week on account of Middle Tennessee Medical Association, was called to order at Shelbyville on May 24 by President Ray, with the following members present: Drs. Taylor, Avery, S. S. and G. W. Moody, Woods, Condit, Coble, Ray and Reagor. Minutes of previous meeting was read and adopted. Dr. J. P. Taylor, of Haley, read a paper on "Neurasthenia," and the discussion was opened by G. W. Moody, and then the subject was interestingly discussed by others present. Under mortuary reports, Dr. Coble reported a case of aneurism of ascending arch of aorta. Dr. Avery reported a case of gunshot wound of brain. Dr. Condit presented a clinic with

valvular lesion of heart. Dr. John E. Hall of Nashville will be with our society at the next meeting and give us a paper on "Use of Cystoscope in Bladder and Kidney Diagnosis." Adjourned to Thursday, June 21st, 1917.

F. B. REAGOR, Secretary.

SULLIVAN-CARTER-JOHNSON.

The Sullivan-Carter-Johnson Medical Society met at Elizabethton on May 3, with a number of physicians from Sullivan, Carter and Johnson counties, besides a number of guests from Johnson City. The meeting was held in the Board of Trade rooms, and a very interesting paper on "Adenoids" was read by Dr. G. M. Peavler of Bristol. Several discussed the subject informally. Other subjects were discussed, among which was Red Cross work, and it was found that several physicians had offered their services to the government in the pending conflict. After the business meeting adjourned, the association was invited to the home of Dr. and Mrs. G. Edward Campbell, where luncheon was served.

HENDERSON COUNTY.

The Henderson County Medical Society held its regular monthly meeting Tuesday, May 15, in the office of Drs. Brandon and Parker, with the President, Dr. W. I. Howell, in the chair. The society was opened with prayer by Dr. M. P. Boyd of Farmville. Dr. R. L. Wylie opened the discussion on "Erysipelas" and reported two interesting cases. The discussion was continued with case reports from Drs. C. H. Johnston, J. M. Arnold, M. P. Boyd, W. I. Howell, G. A. Brandon, C. E. Bolen and S. T. Parker. Dr. Huntsman reported a case of pneumonia with pleurisy with effusion. Dr. E. E. Waller reported a case of pneumonia with pyo-tharax. Dr. R. H. Milam reported a case of tuberculosis of tibia. Dr. W. I. Howell reported a case of ruptured appendix.

Drs. Parker, Wylie and Milam were appointed a Committee on Medical Preparedness for Henderson county. Any doctor in the county wishing to join the Medical Re-

serve Corps will please communicate with the Chairman of the committee, Dr. Parker.

It was decided to have the annual outing of the society on June 19, the place to be selected by the committee, Drs. Parker, Brandon and Watson.

Drs. Johnston, Parker and Wylie were appointed a committee to work out a plan to build a hospital in Lexington for Henderson county, and rousing speeches were made favoring the hospital by Drs. Brandon, Bolen, Boyd, Johnston and Huntsman.

There being no further business, the society adjourned. Doctors present: Bolen, Howell, Boyd, Milam, Wylie, W. B. Keeton, J. T. Keeton, A. L. Waller, E. E. Waller, J. M. Arnold, C. H. Johnston, G. A. Brandon, W. F. Huntsman and S. T. Parker.

SAMUEL T. PARKER, Secretary.

BOOK REVIEWS

PRACTICE OF GYNECOLOGY. By W. Easterly Ashton, M.D., LL.D., Professor of Gynecology, Medico-Chirurgical College of Philadelphia. Sixth Edition. Cloth, \$6.50 net; Half Morocco, \$8.00 net. Octavo of 1097 pages, with 1052 original line drawings. W. B. Saunders Co., Philadelphia.

This is a work of infinite detail and is admirably adapted to the use of students, and at the same time contains much information of a practical nature for the busy doctor.

It is both medical and surgical. While the surgical procedures for any given condition are not profuse, still many classical and well recognized operations are recommended.

The present edition constitutes a considerable revision of the last edition, many changes having been made in etiology, pathology, and treatment; some new operations have been added, while some of the older ones have been dropped. The chapters on Microscopic Examination of Tissues, Examination of the Abdomen, Constipation, and Saline Injections have been materially altered. Great stress is laid upon the prophylactic treatment and diagnosis of cancer of the uterus, with special reference and emphasis upon such points as are of value to the general practitioner in arriving at an early diagnosis in this most important subject.

In addition to the chapters ordinarily found in books written on diseases of women, this work contains special chapters on Microscopic and Bacteriologic Examinations, The Blood in Relation to Surgery, The X-Rays in Gynecology, Hydro-

therapy, Constipation, Diet, Indoor Exercises (fully illustrated), The Causes of Diseases peculiar to Women, and Sterility.

In short, this book is a worthy exponent of its particular field in medicine and we take great pleasure in recommending it to those who desire a modern and progressive treatise in the diseases peculiar to women.

MEDICAL STATE BOARD QUESTIONS AND ANSWERS. By R. Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic, etc. Fourth Edition, revised. W. B. Saunders Company, Philadelphia, 1917. Cloth, \$4.25.

The author of this volume has anticipated, as far as is humanly possible, just what an examining board is to ask and has answered the questions propounded in a most satisfactory manner. Examining boards are prone to put impractical questions sometimes, and so Dr. Goepp has included some of this kind along with an immense number of those most practical. The answers are as comprehensive as could well be in a book of this nature and are wonderfully clear and correct. Certainly this volume will prove of great value in reviewing subjects upon which one must be examined for license to practice medicine. It would be hard to imagine how better one could be guided in his preparation for tests than by the use of this book. Practically all the questions asked are such as have actually been put to hundreds of applicants who have appeared before the examining boards of the various states and thus a great value attaches to Dr. Goepp's work.

DISEASES OF THE SKIN. Stelwagen. 8th Edition. W. B. Saunders Company, Philadelphia.

Stelwagen's text is too well known to need detailed comment. Students, practitioners, and specialists all know what it is. This book has been before the profession and has borne the highest reputation longer than any of the other modern day American texts; and they have increased rather rapidly. Using Hebra's classification as a basis, he very completely covers the ground, leaving out no skin disease of importance. He gives the diseases of the appendages in a most thorough and systematic way, adding new knowledge to some of the diseases of the adjacent mucous membranes. When it comes to completeness of text without any attempts at happiness of expression on etiology, pathology, and the description of diseases, this book stands first. In other words, all the facts and all worthy theories relative to the conditions are brought out. His extensive bibliography shows investigation of all subjects from the earliest to the very latest writers. This, coupled with his own wonderful experience, gives him a most powerful grasp of

the diseases of this branch and enables him to give us a digest which for the combination of compactness and completeness has no equal. The illustrations in this edition are more in number and a decided improvement over the earlier ones, for they were truly lacking in illustrative photographs. Many of the plates in this edition are as good as the best in those texts which make this their chief feature. Truly it can be said that this master of dermatology has kept apace with all things of this branch and in this edition has so touched the old that everything is finished and new.

HOWARD KING.

MISCELLANEOUS

FOOD SHORTAGE: AN APPEAL TO PHYSICIANS.

By J. Ogden Armour.

A food shortage without precedent confronts the United States. Unless there is a change for the better, the coming winter will see prohibitive high prices and consequent suffering from lack of food. The physicians of the United States, as guardians of the public health, are vitally interested because the health and the vitality of the people are at stake. It is in the power of the physicians to help relieve the food shortage by taking the lead in teaching people how to conserve the food supply. It must not be forgotten that conservation of the food supply is just as important and just as necessary as is increased production. Physicians cannot very well increase the production of foodstuffs, but on the conservation side of the problem they can be of inestimable service to the nation.

It is generally recognized that people eat too much. As a nation we are more inclined toward "living to eat" than toward "eating to live." The physicians, better than any others, can discourage this habit of over-eating.

Knowledge of what constitutes properly balanced rations is not widespread. Housewives have not yet had opportunity to absorb the information gained through scientific study of the food problem by experts in domestic science. The result is that the

American dinner table contains much that is unnecessary and often lacks things which should be there. The physicians of the land can correct this. They can spread corrective propaganda among millions of people, and they will be heeded because of the position of trust they occupy in American families.

Correct dieting on the part of American people is of paramount importance as a measure to guard against the food stringency that faces us. We must stop the waste of food by learning how to maintain our health and our strength on less than we are now consuming. In a word, I mean we must begin eating to acquire a proper amount of nourishment instead of eating just to fill up. We must make a study of the nutrition in various foods and find out what will give the amount of nourishment we really need. When we have learned these things, our housewives can begin serving us with meals that will satisfy the appetite and provide us with plenty of nourishment without entailing any waste. With the waste eliminated the food problem will be practically solved.

There is no doubt in my mind as to ability of the physicians of the nation to make themselves of prime importance in this fight to conserve the food supply. They have the necessary information and they have at their disposal the channels through which it can best be disseminated among the people of the land.

An old adage says, "Go to the busy man to get things done." Appealing to the physicians to help the food conservation movement is surely carrying out the thought in the adage. The physicians will do their "bit" for the fighting forces of the nation. We confidently expect the medical corps to outstrip their European contemporaries in solving the surgical and medical problems of the battlefield and the camp. But it is as necessary to have food as it is to have live soldiers, even in a time of war, for without food there would soon be no live soldiers.

Therefore the "bit" that the physicians can do for their country is not limited to the service they can render to the army on the battlefield. They can serve the army in binding up its wounds, and they can serve the nation by showing it how to conserve food

through the intelligent use of a smaller quantity than is now being consumed.

As one familiar with the food situation, I can say that the public has not yet been sufficiently impressed either with the need for more production or with the necessity for more economical handling. This is a time when one can do things that would seem presumptuous in normal times. Under that right, I call on the physicians of the United States to interest themselves in the food conservation campaign and to do all in their power to advise the public as to the imperative need for conserving to the greatest possible degree, the food supply of the nation.—Journal A. M. A.

The board bill for last year's babies was almost as great as the undertaker's bill for last year's babies.

THE VITAMINE CONTENT.

The interest of physicians the country over has been greatly aroused by the publication of Reprint No. 333 from the Public Health Reports. The article is entitled "Bread as a Food, and Diseases, Malnutrition and the Vitamine Content in Its Relation to Pellagra."

The conclusion of the article that a reduced vitamine content of the diet immediately preceded the rapid increase of pellagra in that section is important as showing the cause of the disease, but the influence of the careless and indiscriminate use of soda in cooking as a cause of the reduced vitamine content of the diet is almost equally important. It shows the necessity of the physician giving advice to the housewife in regard to her methods of cooking.

The use of soda in cooking leaves the food alkaline and the alkali destroys the vitamins. If, however, a proper amount of an acid ingredient is used, the food is not alkaline and the vitamins are not destroyed. In cooking breadstuffs, it has become a custom to use soda only as a leavening agent in certain sections of the country. In these sections pellagra has been prevalent. The physician must take note of this custom and advise its discontinuance.

In other sections, milk or sour milk is used with the soda. This is a better practice, but still is fraught with a grave danger. The amount of sourness, or lactic acid, must be guessed at and the corresponding amount of soda also guessed. The housewife seldom ever does any guessing, because she does not understand that a relationship exists between the sourness and the soda. She adds what she considers enough soda to leaven, and what she considers enough milk or sour milk to enrich and moisten. As a result, the food is most often alkaline. The physician should advise against incurring these dangers. They can be absolutely avoided by the use of properly made baking powder, using sweet milk if desired. All well-known brands of baking powder are manufactured under chemical supervision and are reliable, while the housewife's rule of thumb methods with soda are dangerous in the preparation of breadstuffs.

Breadstuffs are the principal food material of a great class of the people, and their vitamine content is therefore to be husbanded and not destroyed. If, as a result of the economic depression beginning with the year 1907, the cost of food has increased out of proportion to the increase in wages, and that the pellagra incidence has also increased considerably since 1907, what are we to expect with the war prices that prevail today, which are felt all over the country? From 1907 there took place a reduction in the diet of the people of such foods as milk, eggs and meat, with a consequent reduction in the vitamine content of the diet. A like reduction is taking place on an even larger scale today, and therefore is the greater need of husbanding the nutritious qualities of bread and cereal products in general.

In this connection should be considered self-rising flour. This is a product containing soda, salt, and an acid ingredient. If properly compounded, the soda and acid should neutralize each other and no alkali be left in the food to destroy the vitamins. Self-rising flour, however, is being manufactured largely by housewife rule of thumb methods, without chemical supervision. It contains phosphate rich in calcium sulphate, which latter is undesirable in food products. The use of a standard baking powder and a

good flour is cheaper for the consumer and is safe. The latter consideration should overcome the tendencies to laziness to which weakness, only, self-rising flour caters.—The Journal of the Florida Medical Association.

YOUR AGE!

HOW OLD ARE YOU?

Never in the history of this country has this question been of such vital interest to so many people as it is today, June 5, 1917.

Never before has the United States Government been so deeply interested in knowing the exact ages of the young men of the land.

So that never before has the public mind been so ready to grasp the great importance of complete birth registration.

In ordinary times as the years go by and problem after problem is taken up and settled our civilization grows; and the more rapidly these problems are taken up and settled the more rapidly this civilization grows.

In ordinary times the continual demands upon our attention first by one problem and then by another easily explains the temporary sidetracking in so many states of the problem of COMPLETE BIRTH REGISTRATION. It is not because the people believe birth registration unimportant, but the problem has simply been crowded to one side until a more favorable day.

When the story is told of the American arrested in London as a German spy, unable to obtain a birth certificate because his birth had never been recorded and because the doctor had died, but finally saved by the discovery of an old letter which told of his birth, the people grasp the point and agree that births should be registered; but as the story relates to somebody far away, somebody unknown, and probably never heard of before, the point is soon forgotten and no wave of strong public opinion is ever really started. So, too, the statements that birth records are needed to prove men of voting age, to establish old age pensions and pensions for the children of soldiers, to establish rights of inheritance, to determine how efficiently the states are protecting the health of the children, and to determine who is entitled to the

protection of OUR FLAG—these statements are too apt to be treated as old axioms which call for no immediate reform.

The need for complete birth registration is recognized, but the inertia of the people still prevails.

Thus in ordinary times the problems of civilization are settled slowly, but not so in time of war or after great catastrophes. Then the emergency or bitter experience brings quick results.

The city devastated by fire is so rebuilt as to guard against a second conflagration.

The terrible loss of life which follows overloading an excursion steamer soon results in more stringent laws and in greater safety for future travelers.

And today—this WAR CALL for the registration of our young men brings home the need of birth records to every community and to almost every family in the United States.

HOW OLD ARE YOU?

Can you prove that you are under 21 or over 31, or must you forever be suspected of having falsified your age?

Perhaps a fond mother to save her son from the horrors of the trenches may swear that he is below the age limit; perhaps years later proof will be found that this man should have registered; imagine his chagrin at not having done his part in the WAR.

Perhaps there are slakers who in the absence of birth records may be able to shirk registration.

Surely on this day the need of complete birth registration is evident to all.

May we not hope that this call for the registration of all men between the ages of 21 and 31 will awaken the people from their lethargy and lead at once to this forward step in our civilization—the REGISTRATION OF EVERY BIRTH.

If you are interested and wish to know how to obtain better birth registration in your state write to the United States Census Bureau.

Babies have a right to an officially registered name.

Dirty milk kills many babies.

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TRAUMATIC HYSTERIA.*

By William G. Somerville, A.B., M.D.,
Memphis.

Hysteria should not be designated a disease, but rather a condition, in which are manifested numerous and variable symptoms simulating almost every disease, but without pathological changes. It is purely a psychological problem, the understanding of which must be approached through psychology, and especially subconscientious phenomena.

There is a close similarity between hypnotism and hysteria, the chief difference being the brevity of the duration of the manifestations seen in hypnotism as compared with the latter. As suggestion and the subconscious play the most important role in hypnotism, so do they in the genesis of hysteria. For the production of hysteria we must have auto or hetero-suggestion together with a strong emotional content, which produces ideas in the form of wishes or fears, which ideas with the accompanying emotions are banished to the subconscious, where they dominate and control the actions of the subject. Those who have read Morton Prince's book, "The Unconscious," cannot fail to see the wonderful working of the subconscious mind, and the great influence it has over shaping our everyday thoughts and actions. It is probable that the greater part of the content of the subconscious (at least the part which mostly influences our conduct) are repressed wishes—wishes which are unethical or of which we

are ashamed, or which are selfish; but not all necessarily sexual, as Freud believes. So these repressed, submerged, or unconscientious wishes control and color our acts and thoughts, and make us as normal individuals do things whereby we may accomplish those wishes. How much more true it is of the hysteric, whose submerged complexes in the form of unconscientious desires for sympathy, retaliation, freedom from work or disagreeable duties, or indemnity in the case of supposed injury, produce or bring about paralyses, anaesthesias, amaurosis, or fits, as means for the fulfillment of their unconscious wishes. One who has read Freud's "Interpretation of Dreams" is struck by the fact that the interpretation of hysterical symptoms is closely related to that of dreams in that the manifestations of both are the results of repressed thoughts and represent the fulfillment of a wish or a means to that end. Another essential difference between hypnotism and hysteria is that in the former there is a complete "dissociation of personality," and ideas and suggestions given the subject by the operator enter directly the subconscious realm and there have full play, giving immediate expression and reaction, uninhibited by the conscious mind; whereas in the hysteric there is only a partial dissociation of personality—only certain repressed ideas, which originally existed in the conscious mind, placed there by auto- or hetero-suggestion, and later submerged with their emotional content, after a long or short interval give expression and reaction, but also uninhibited by the conscious mind.

There is no essential difference between hysteria and the so-called "traumatic hys-

*Read at Annual Meeting of the Tennessee State Medical Association, Nashville, April, 1917.

teria," the latter being the designation of that which follows an injury; the symptomatology of the two may be identical. If one sustains an injury of the arm which severs or injures the musculo-spiral nerve, for example, there are found characteristic symptoms due to paralysis of the muscles supplied by this nerve, and an anaesthesia of the skin corresponding to the area supplied by the nerve, loss of tendon reflexes, atrophy and electrical changes in the muscles involved. Such a case is readily diagnosed as traumatic neuritis.

If, however, in another case, who has sustained a slight injury of the arm, for example, a contusion which does not injure the nerve, but which is followed by a paralysis of the arm with anaesthesia, not corresponding to any special anatomical nerve distribution, without atrophy or electrical changes, or alteration in the tendon reflexes, we can readily diagnose this as hysterical paralysis; and simply because a trauma has preceded it, we are accustomed to designate it more specifically as "traumatic hysteria," or a "traumatic psycho-neurosis."

In the first case it is very evident that the injury is the absolute cause of the paralysis; but in the latter case the injury *per se* has nothing to do with the symptoms. The trauma is an excuse, a suggestion, which involves an idea of the injury, which idea is elaborated in the subconscious mind of the individual as a false idea. Accompanying this trauma, and based on a false idea that the injury was severe, is a desire for remuneration; but in order that this may be obtained, that there may be a fulfillment of the wish, physical symptoms indicative of severe injury must be manifest. But to pretend such would be malingering, unethical and dishonest, so this idea is rejected, submerged and relegated to the subconscious, where unconsciously to the subject it causes the various symptoms of hysteria, viz: paralyse, anaesthetics, pains, etc., and thereby accomplishes the fulfillment of a repressed wish which the conscious mind was too honest to do.

When these ideas are not repressed, and the subject consciously pretends the symptoms, we call him a malingerer or faker. But whether hysteria follows physical trauma or

not, there is an object to be obtained—in the one case remuneration, and in the other, sympathy, retaliation, freedom from work or disagreeable duties which otherwise must be faced. The wish to obtain indemnity, or to get sympathy, or to shirk duties, is originally a conscious one, but being recognized as unethical is repressed; and, in the subconscious mind, is elaborated the means by which to obtain or accomplish the end wished. This takes place without the conscious knowledge of the patient, and is therefore an unconscious deception in close relationship with malingering, which is a conscious deception.

To refer again to our examples, and to recapitulate, the neuritis and paralysis following the injury to the musculo-spiral nerve is a reaction to that injury, and, without question, a justifiable reaction. It is true that the paralysis in the second case is a reaction to the injury, but the question is, Was it a justifiable reaction? To say that this hysterical paralysis would not have occurred had it not been for the trauma does not make it a justifiable cause.

A man, standing on the street, may be attacked by another with a gun, and his reaction would be to shoot his assailant—a reaction without question wholly justifiable. Another in a crowd has his toes stepped on, and his reaction may be the same as the first, viz., to shoot the man who had accidentally stepped on him; but was it a justifiable reaction? True it is that the shooting would not have occurred had he not been stepped on, but certainly the cause was not justifiable.

Hysteria may be described as a functional nervous state closely related to hypnotism, characterized by various and peculiar symptoms and phenomena, dependent on suggestion, either auto or external. These suggestions, accompanied by strong emotions, produce ideas in the form of wishes or desires, which ideas become dissociated or submerged memory complexes, and are the unconscious motives which determine the hysteric's symptoms and actions. The symptoms, then, are the expressions of dissociated or submerged wishes, and are unconscious means for the attainment or fulfillment of a wish.

It is a comparatively easy matter as a rule

to differentiate between the symptoms due to an organic lesion of the nervous system and the symptoms simulating such and due to hysteria or malingering; but, for me, I must admit that it is extremely difficult and often impossible to distinguish between hysteria and malingering. Yet when we consider that psychologically, and in reality, the only difference is that the one results from a subconscious "willing," and the other from a conscious "willing," one can readily see how similar they are, and thus explain the difficulty. The symptoms produced by the subconscious are maintained without effort and for a longer period than those brought about by the conscious mind, though this is not always true. In the former the symptoms continue even when not observed, while in the latter they disappear when there is no fear of detection. Then there is frequently a combination of the subconscious and the conscious. Students of Freud and his "libido" theory of the neuroses, who have followed other writers and thinkers on this subject, are struck with Adler's doctrine concerning the neuroses. In short, Alfred Adler has revolted from Freud's sexual theory and does not believe that sexual questions are always responsible for the origin and elaboration of the neurosis, but that the subject tries to escape from the realities of life by the rearing of false defenses, "behind which he assures himself against the unmercifulness of reality," as Poul Bjerre expresses it. To quote Bjerre: "There is no doubt that the assurance-mechanism plays a main part in a greater number of neurotic conditions. The man who struggles with his polygamous tendencies and wishes to escape prostitution rears up in his mind the syphilis-phobia syndrome, and behind this wall feels himself safe. The wife who wishes to escape the marriage connection and the bearing of many children notices some vague uncomfortable feelings in her reproductive organs; she grasps these feelings as a drowning man grasps a straw, she makes as much as she can of them until they become an actual pain which necessitates long-standing local-treatment from a clever specialist—it may even happen that she has her home in a country town, but that the specialist can be seen only

in a metropolis where she has longed to live. The young girl who has been put into an office and finds the monotony of the work there as loathsome as she finds the boldness of the men, suddenly gets agoraphobia—there is nothing to do but to allow her to stay at home and escape her part towards helping in the home's common support. The teacher who has too much to do faints in the middle of a lecture; she is carried home, gets a free day, and thus assures herself against over-tiredness. The further advanced neurotic who already spends life in bed and thinks it monotonous to be alone, gets peculiar attacks in which, for example, he rushes to the window and tries to throw himself out; these attacks necessitate the continual presence of a nurse, in spite of the fact that the family can ill afford to the luxury."

The poor wife or daughter, wearying of the drudgery of keeping house, settles into a state of invalidism in order to escape these duties and shift the responsibility to others, or else breaks up the happy home by making it necessary to board. The employe of a wealthy corporation gets a minor injury, and seeing visions of wealth provided he can show sufficient symptoms to justify his claim, assumes all sorts of paralyses, pains, and symptom-complexes, which baffle every treatment except one, viz., the final awarding of damages by the court of appeals. The daughter, who craves sympathy from her parents, suddenly develops pains, cramps or paralyses, in order to get her wishes gratified.

We believe that there is a motive at the bottom of every neurosis, and that it is the psychic cause of its genesis. The motive may be to escape disagreeable duties, to obtain sympathy, or to get money for trivial injuries.

In order to successfully treat the neuroses, whether they be the so-called "traumatic," or the plain neuroses, it is of especial importance for every physician to understand fully not only the motive but its mechanism. No difficulty lies in understanding the motive in traumatic cases, but it requires considerable time and thought to ferret out the motive in other cases. As Bjerre says, "It is very often with the assistance of the doctor that neu-

otics are successful in carrying through this strategem. The patient himself has no comprehension of the trouble to which he has suddenly fallen a victim." In the case of a supposed traumatic neurosis, the physician must first of all satisfy himself by a careful examination that he has to deal with a neurosis and that the injury is not in itself the cause, and then he must not only frankly state this to the patient, but he must explain to him the mechanism of its development and make him see his motive. In other neuroses the motive and mechanism can be arrived at by psycho-analysis, and when this has been done tell the patient frankly about it and make him see it. It is very important that he should be isolated, especially from the family, so that the work of the physician will not be counteracted by a sympathetic mother, wife, or husband.

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DISCUSSION.

DR. J. B. McELROY, Memphis: I do not get up in any sense to discuss this paper, but simply to express an idea that it is really a paper which is an authoritative one, and which is one in the nature of an address and leaves very little for discussion. Of course, we are all troubled with these cases of hysteria, whether traumatic neurosis, or whether it be of the natural or other kind. They are all very difficult cases to treat. Undoubtedly there is much we have to know. I simply rise to say that Dr. Somerville's paper is in a class by itself.

DR. SOMERVILLE (closing): I have nothing further to add except to impress upon every one in treating neuroses, as I brought out in my paper, the importance of finding out or trying to find out the motive by which these neuroses have developed, and not make patients think they have some disease, not to give them medicine, but to tell them frankly what they are up against. They will probably get another doctor, but if everybody did that, they would soon be cured.

He who is too busy to care for his health may have to take time to cure disease.

Good health is the foundation of personal usefulness either in peace or in war.

The only good fly is the dead one.

**FIRST CORINTHIANS, FIFTEENTH
CHAPTER AND THIRTY-
NINTH VERSE.***

By J. B. McElroy, M.D.,
Memphis.

"All flesh is not the same flesh; but there is one kind of flesh of man, another flesh of beasts, another of fishes, and another of birds."

In selecting this text, I do not intend to follow up the apostle's idea as to the manner of the resurrection, nor indeed to preach a sermon.

The interest aroused in the comparatively new researches into the acid-base equilibrium of the body fluids and tissues, and the newer bio-chemical procedures for the detection of the presence and degree of the same, has modified the conception which Nannyn had in mind when he coined the term *acidosis*, we may paraphrase our text by saying: All acidoses are not the same acidoses; but there are kinds of acidoses of internists, other acidoses of pediatricians, others of surgeons, and others of bio-chemists.

By right of priority and long possession, the internists may lay just claim to the acidosis occurring in diabetes mellitus. How long, however, before the surgeon will decide to poach in this field, as he has already done in appendicitis, gall bladder disease, peptic ulcer, goitres, etc., is uncertain.

We are now beginning to hear *ex cathedra* that cholecystectomy cures chronic pancreatitis. Advancement is the result of new ideas and new blood; and if the surgeons help us as much in this difficult territory as they have in appendicitis, gall bladder diseases, peptic ulcers and exophthalmic goitre, they will be heartily welcome, at least by me, as they were in the diseases mentioned.

The one characteristic which was embraced in the term "acidosis" as used by Nannyn was the excess of acetone bodies in the blood, particularly of B. oxybutyric acid. Ketonuria, the presence of acetone bodies (B. oxy-

*Read at Annual Meeting of Tennessee State Medical Association, Nashville, April, 1917.

butyric acid, aceto-acetic acid and acetone) in the urine has long been known as the result of carbohydrate starvation. This deficiency may result from diminished intake or from the inability of the tissues to utilize carbohydrates. ¹“Some authorities have maintained that carbohydrate starvation is the sole cause of ketonuria, and that in the last analysis all cases will be shown to be due to this cause.” There are, however, conditions associated with the presence of acetone bodies, such as the cyclic vomiting of children, chloroform poisoning, phosphorus poisoning, and others which are difficult to explain on the theory of carbohydrate starvation.

Whatever theory of diabetes we accept, we are brought to face the anomalous fact that there is starvation even in the midst of plenty. In diabetes, with marked impairment of the body to utilize carbohydrates, non-volatile acids accumulate in excess. These acids are the intermediate products of protein and fat metabolism. The mother substances of aceto-acetic and B. oxybutyric acids are now believed to be fats and certain amino acid radicles (leucin, tyrosin and phenylalanin) of the protein molecule. The former is by far the most important source. In the catabolism of fats, the butyric acid stage is reached normally, but having arrived at this stage, the oxidation of this substance into the higher fatty acids is arrested in the absence of sufficient utilization of carbohydrates. This has given to the expression that the fats are burned in the flame of the carbohydrates. The bio-chemists tell us that one molecule of carbohydrates must be burned to insure the complete oxidation of three molecules of fat, that ²“when the mixture undergoing oxidation contains a proportion of fatty acids to glucose greater than three to one, acidosis bodies, acetone, diacetic acid and B. oxybutyric acid, are produced instead of the normal end products of oxidation (carbon dioxide and water).”

However, it is known that ³“considerable differences exist among various individuals in regard to the degree of ketonuria, which follows the complete withdrawal of carbohydrates from the diet.”

Furthermore, in diabetes also “there exists no exact relationship between the degree of ketonuria and of carbohydrate starvation in different patients. Many exceptions exist to the general rule that the less sugar a diabetic can burn the more marked is his ketonuria.”

Certain patients with an extremely low tolerance for carbohydrates may show only small amounts of the acetone bodies in the urine, while other patients with a much better tolerance for carbohydrates may show pronounced ketonuria.⁴

All are agreed that the clinical syndrome, characterized by restlessness, a fruity odor of the breath, a pink color of the mucous membranes, ketonuria, hyperpnoea, drowsiness, stupor and coma occurring in diabetes and known as Kussmaul's coma, is due to an excess of B. oxybutyric acid. Whether this is due to an acid intoxication, to an impairment or exhaustion of the alkali reserve of the body, or to the specific toxic effects of the B. oxybutyric acid, are still questions of debate. It has been found in this condition that the carbon dioxide tension of the alveolar air is decreased, that the carbon dioxide combining power of the blood plasma is diminished, the H-ion concentration of the blood is increased, the ammonia excretion is increased in the absence of alkali therapy, that the tolerance for alkalis is increased—all indications of an acidosis in the more recent sense of the term, viz: ⁵“A disturbance of the acid-base equilibrium whereby the power to resist acids in the body is lost.”

On the other hand, according to Magnus Levy,⁶ “the blood, muscles and glands give up none of their alkali in diabetic acidosis.” ⁷“Again there is clinical as well as experimental evidence that diabetic coma is not entirely an acid intoxication. Patients are said to have passed into coma, even during the administration of sufficient quantities of alkali to keep the urine alkaline. The intra-venous injection of alkali, which has frequently brought a comatose patient to consciousness, has usually failed to prevent a relapse within hours or days.” Furthermore, the experimental administration of sodium B. oxybutyrate produces a symptom complex which has many points in common with the diabetic

coma of man. I think it is apparent from this that diabetic acidosis is not simply a displacement of reaction resulting in impoverishment of basis.

Acid formation in the body is the result of various and numerous processes. It is a constant result of metabolism. The carbon of proteins, carbohydrates and fats is burned to carbonic acid; a part of the sulphur of the proteins is converted into sulphuric acid, the phosphorus of the nucleo-proteins and lethicin is changed to phosphoric acid; fatty acids are set free from fats; the deaminization of amino acids leaves an organic acid from which the alkaline amino acid radicle has been removed. We have seen how acetoacetic and B. oxybutyric acid are formed. Indeed, it has been stated that acids are prominent products of the transformation of latent into kinetic energy; that "Every motion, every emotion, every injury, every physical exertion, every degree of fever, every reaction to infection or auto-intoxication, every respiratory movement, every heart beat produces acid by-products."

While one sometimes meets the expression, "free acids in the blood," they probably do not exist in a free state. It has long been known that an acid reaction of the blood is incompatible with life. Those acids which are formed are combined with the sodium bicarbonate, occurring both in the plasma and cells; with the acid and alkaline phosphates found almost entirely within the red blood cells and with the proteins. A portion of the bases is also supplied by magnesium and calcium, so that the conception of an acidosis does not consider the presence of free acids in the blood nor indeed an acid reaction of the blood, but a shifting of the reaction to the H-ion side due to deprivation of bases in the body. It has been said that "one of the most remarkable phenomena of physiology is the tenacity with which the circulating medium holds to that reaction of practical neutrality essential to the continuation of life in the tissues which it serves.

This acid-base equilibrium is maintained by the salts of the blood referred to—the buffer substances, as they have been called; by the elimination of acids through the lungs and kidneys, and by the neutralization of acids

by an increase in the ammonia. It is apparent that an exhaustion of the alkali reserve—acidosis—may result from increased acid formation, impairment of the acid eliminative function of the lungs and kidneys, and from diminished ammonia formation.

The internist meets this acidosis in infection like rheumatic fever and in the acute and chronic diffuse nephropathies. In the latter case, it would seem to be due to the impairment of the specific function of the kidney to excrete acid sodium phosphate. Here there is no increased excretion of ammonia, there is no evidence of carbohydrate starvation—no ketonuria. The researches of ¹⁰Marriott, Haessler and Howland show in these cases a retention of acid phosphates in the serum and that this retention is not a part of a general salt retention.

There is no increase of the sodium chloride corresponding to the increase in acid phosphate; it is not proportioned to the total nitrogen and urea retention; there is no similar increase in the inorganic phosphate in that form of acidosis occurring in diabetes mellitus. This acid phosphate retention could not be diminished by the administration of sodium bicarbonate. In these cases they also found a decrease in the calcium of the serum and that the administration of calcium increased the elimination of phosphates by the intestines—a fact which suggests that we might get better therapeutic results from prepared chalk in these cases of acidosis than from sodium bicarbonate.

The pediatrician, like the internist, has his acidoses or an acidosis occurring under different conditions. He may have acidosis with ketonuria and acidosis without ketonuria, and the former may occur with abundance of carbohydrates and without a hyperglycemia, as in the cyclic vomiting of childhood, or with carbohydrate starvation. The recognition of these conditions in childhood is of particular importance. I can recall from my earlier experience children whose parents said they at first became nervous and irritable, slept poorly, developed a little fever, vomited incessantly, became obstinately constipated, had difficulty in breathing, and they usually, I may say almost always, progressed into coma and death. Such cases in the Mississippi

Delta were treated as pernicious malaria. I could demonstrate no malarial parasites and knew they were not malaria, but the children nor I was any better off, for I did not know what was the matter with them.

I have also been called to see post-operative cases where the operation was eminently successful, but the patient was doing very bad. The history would be that the patient stood the anesthetic poorly, there had been a great deal of vomiting, the respiration had been labored, and lately the patient had been drowsy. At the examination coma is present, nothing can be found in the heart, lungs, nothing wrong at the site of operation, possibly some albumin and casts are present in the urine and the death certificate is signed uraemia; or again there has been no sign of coma, but there has been inability to get the bowels to move, there is sympany, the temperature has gone up a little, and I have agreed with the surgeon that there is a peritonitis. I am sure I would now test the urine of such patients for acetone bodies, test the alkali tolerance, see how much sodium bicarb. would be necessary to render the urine alkaline or perhaps test the CO² combining power of the blood plasma or the r. p. H.

So the surgeon has his acidoses and again these may be associated with ketonuria, or this may be absent. These acidoses are more likely to occur in children and women and those whose tissues have been starved as the result of long-existing disease. The starvation which patients are sometimes subjected to in preparation for operation is a large contributing factor. ¹¹"Bradner and Reimann have shown that a considerable percentage of a series of consecutive operative cases in Deaver's clinic has shown acetone and diacetic acid in the urine; that the temperament of the individual and the length of times preparative treatment (of nothing by mouth and saline by bowel) has been carried out, appeared to have a slight positive effect upon the acetone eliminated."

¹²Crile has shown that there is a marked immediate increase in the H-ion concentration in the blood in ether and nitrous oxide anesthesia; that inhalation anesthesia is absolutely contradicted with starved patients,

with patients whose vitality is at a low ebb, in whom acidosis is already markedly present.

We have already stated that a fatal acidosis may occur as the result of delayed chloroform poisoning. The surgeon is keen to obtain a low percentage mortality, to consider the factors of safety, and he is to be commended for this. In this connection, I recall a story which Dr. Frank Jones tells, and while I cannot tell it like he does, I think I shall anticipate him. An old negro preacher was discoursing on the great things which God had done in the creation of man. He said, "God made man and man made a steam engine what run forty miles an hour." An old negro in the amen corner said, "Dat's so, 'Ise rid on 'em." The preacher says, "Dat ain't all. God made man and man made an automobile what run sixty miles an hour." The old negro said, "Dat's de Gospel truth, I just now seed one o' 'em go by." Said the preacher, "Dat ain't all, God made man and man made an airplane what goes 150 miles an hour." The old amen corner negro exclaimed, "Gawd-damn." A long time ago, safety demanded of the surgeon an examination of the urine for albumin and casts. A few years back, safety said to the surgeon, you must determine the phthalein output. Still more recently he thinks that the phthalein test may deprive some one of the operation which he is sorely in need of and he must figure out
(work out a complex formula)

And still more recently he must determine the alkali reserve as shown by the Van Slyke method for the carbon dioxide power of the plasma or the r. p. H. of the blood. He may join the amen corner negroes at this stage, but he may be confidently expected to conserve his mortality.

In conclusion, we may say that just as all flesh is not the same flesh, just as there are celestial bodies and bodies terrestrial, just as there is one glory of the sun, another of the moon, and another of the stars, so there are acidoses dependent on deficient intake of carbohydrates, others dependent on deficiency of certain renal function, and still other acidoses as yet as mysterious as the resurrection itself.

DISCUSSION.

DR. FRANK A. JONES, Memphis: Dr. McElroy has taken a very powerful text from one of the world's greatest philosophers—Paul. He has in a very lucid manner applied the text to the material physical man and his metaphor has been well taken.

I was glad the doctor concluded his remarks by giving credit to other things in that same chapter. For instance, he says, "There are also celestial bodies, and bodies terrestrial; but the glory of the celestial is one, and the glory of the terrestrial is another. There is one glory of the sun, and another glory of the moon, and another glory of the stars." I am glad Dr. McElroy did not talk on the glory of the laboratory man.

This question of acidosis is one that is being more universally looked into than any other question in the whole process of bio-chemistry. Certainly, we should make a thorough investigation of acidosis, from Naunyn down. It behooves all of us as physicians to consider acidosis from the standpoint of the internist, the pediatricist, and the surgeon. We cannot know too much about acidosis. When we come to discuss acidosis we find it is unnecessary to touch on the question because Dr. McElroy has covered it so completely. When we consider that a good deal of work has been done on acidosis from Naunyn down to the present time, there are still real agencies back of acidosis, among them fermentation of the carbohydrates and fats. Following Naunyn came von Noorden, who takes the opposite position in regard to a fermentation process and says it is not so much a fermentation process as it is a decomposition of the proteid matter. It does not make any difference what it is, whether it is a decomposition of the proteid matter or a fermentation of the carbohydrates.

With reference to the attitude of the surgeon towards acidosis, Dr. McElroy has been conservative. Possibly in the last analysis he has in a measure put a blockade around the port of entry. As regards the surgeon, we hear much today about blockades. If you go back to international law and take a definition of blockade, no blockade is complete and is recognized by any nationality unless it is effective and unless there are enough vessels to see that this port is blockaded with the restrictions laid down. The surgeon absolutely is blockaded from his port of entry. He must have common sense in his head. He must not forget in these cases that the laboratory man is a valuable adjuvant as first aid, as our running companion. We must not forget also the valuable work he does for us, and this work, as Dr. McElroy has said, is being done at the hands of skillful, expert men. There are a few of them in this audience. It is not the average practitioner of medicine. I am not here to preach anything that is not ideal, but the question of acido-

sis has been worked out through the instrumentality of good men. I do not think any man can make an Ambard coefficient, nor can any practitioner determine the percentage of sugar in diabetes. It takes a trained man to do this, and only those men in the interior districts that are associated with laboratories can carry on this work efficiently. In the working process of these conditions there has got to be several kinds of glory, several kinds of poets, and several kinds of flesh, one the glory of the sun, another the glory of the moon, and still another the glory of the stars. (Laughter.)

DR. E. S. MAXWELL, Nashville: There is very little that can be added to this paper; however, I wish to emphasize one or two points. In the first place, acetonuria does not mean acidosis. By far the larger percentage of cases with acetonuria do not have acidosis, and at the same time the greater percentage of cases of acidosis do not have acetonuria. Secondly, we must remember that acidosis is not a clinical entity. It is a symptom of an abnormal condition in the body. As the doctor has brought out, it may be a symptom of retention of the acids produced in normal metabolism, or a symptom of the abnormal production of acids.

There are a number of tests for demonstrating the presence of acidosis, two of which I will mention, do not require an expert laboratory man to carry out. These are within the scope of the general practitioner. The first is Marriott's method of determining alveolar carbon dioxide tension. It is a simple, cheap apparatus; it costs, I believe, five dollars. The test can be made at the bedside in two minutes. It is a good, reliable test. Another is the alkali tolerance test of Selders, which depends upon the fact that when five to ten grams of sodium bicarbonate is given by mouth to normal individual will produce an alkaline urine. In acidosis it requires much more. The technique is to give five grams of sodium bicarbonate every two hours until the urine becomes neutral or alkaline. You are doing exactly what you want to do in treating these cases, and at the same time you are determining the amount or severity of the acidosis. These two tests are clinical tests and are within the reach of all of us. The most accurate and delicate test is, I think, Van Slyke's method of estimating the carbon dioxide of the blood plasma. This is more delicate, and will show an acidosis is present before it can be demonstrated by the other tests.

DR. J. H. BARNETT, Chattanooga: I want to express my appreciation of this splendid paper and to call attention to a few points that have been mentioned by the essayist and brought out in the discussion.

The last speaker (Dr. Maxwell) mentioned tests for determining the carbon dioxide of alveolar tension. Now, the carbon dioxide tension of blood has a great bearing on the internal ven-

tilation of the body; in other words, on the oxygenation. When this CO₂ content is below 40, the percentage of mixing of oxygen with hemoglobin falls off rapidly. These cases of acidosis where you smell ether on the breath in childhood, or any other cases of acidosis, have irregular breathing. They breathe too quickly. They may breathe eighteen times per minute, but the pause between inhalation and exhalation is too quick, and the CO₂ is discharged so that there is no tension in the blood, and we are bordering on in these states a condition in surgery that is called acapnia. Frequently in administering anaesthetics a patient quits breathing. Many patients have been killed by the efforts of the surgeon and anesthetist to make them breathe under these conditions. If you put in a big lot of artificial respiration or CO₂ the content cannot come up; your blood is not carrying oxygen; your patient dies of asphyxia finally; the heart stops beating on account on a lack of oxygen to the heart muscle. There is a vital relation between internal oxygenation or internal respiration and acidosis. When we have patients who for some reason have been deprived of carbohydrate foods, and they are in the condition or symptom complex of acidosis, they have to be operated on on account of their condition, and we cannot prepare them by the administration of alkalis. This is a condition in which operation is immediately imperative, and in such cases the insufflation of oxygen in the abdomen has given me such excellent results. The oxygen combats the acidosis. I have seen in my work a disappearance of the acetone bodies in the urine within six hours after the abdominal insufflation of oxygen.

DR. McELROY (closing): I selected this subject on account of the great confusion which it has produced, at least, in my mind, so much so that our views have changed, as we have said in the paper, but I want to emphasize the fact, as brought out by Dr. Maxwell of Nashville, have the bio-chemists a right altogether to filch the old nomenclature? The term acidosis, in the first place, was coined by Naunyn, and the central idea in Naunyn's mind was that it meant an excess of acetone bodies, and more particularly of beta oxybutyric acid. The idea of acid intoxication was discussed pro and con for a long time, but Henderson with his studies about acid base equilibrium of the body showed that it is not due to the acids at all, but the whole thing is an inability of the body to protect itself against acids by virtue of exhaustion or impairment of the alkali reserve. That is the reason why, when we approach this subject, we must keep in mind that when one man says acidosis he means one thing, and when another man says acidosis he means another thing. It is the same way with respect to the various tests which we have to determine this condition. Here I would like to

emphasize the fact that these simple tests are of very great importance, and the clinical manifestations of the condition are of equal importance. So the first manifestation of acidosis is a clinical one. All these patients have a considerable degree of acidosis, they have air hunger, and that is the result of the mechanism by which the body keeps fluids in a continuous reaction, largely from the fact that the respiratory centers are irritated by these acid bodies, and as a result of that there is a ventilation of the lung and more carbon dioxide is excreted and forms one of the great protections of the body to keep its fluids in a practical state of development. So hyperpnea is one of the principal symptoms. In hydrothorax the great degree of dyspnea is not so much due to the accumulation of fluid in the chest as it is to this hyperpnea.

¹Monographic Medicum, Hewlett.

²DeShea—Chemistry and Chemical Diagnosis. Read before Memphis and Shelby Co. Med. So.

³Hewlett, Loc. Cit.

⁴Hewlett, Loc. Cit.

⁵L. J. Henderson, N. Y. Med. Journal, Dec. 2, 1916.

⁶Quoted by Van Noorden—Metabolism and Practice of Medicine.

⁷Hewlett, Loc. Cib.

⁸Crile, Annals of Surgery

⁹Dr. Shea, Loc. Cib.

¹⁰Howland, Huessler and Maerwitt; Jour. Bavl. Chem., March, 1916.

¹¹Ans., June Med. So., Nov., 1915.

¹²Crile, Loc. Cib.

A CASE OF CONGENITAL DEFORMITY WITH SPECIAL REFERENCE TO THE TREATMENT EMPLOYED.*

By A. G. Nichol, M.D., and R. H. Perry, M.D.,
Nashville.

Among the rare types of congenital deformity are those that show partial or total absence of one or more of the long bones. On account of the rarity of this type of defect, as well as the unique method of treatment employed, we feel justified in reporting the following case and briefly discussing the condition.

Case Report.

Family History: G. B., age 2 years and 8

*Case shown before Nashville Academy of Medicine, April 10, 1917.

months, was the first child of healthy parents. Her father and mother give a negative history in every detail, and the family history with reference to tuberculosis, syphilis, deformities, etc., was negative. There is one other child who is 14 months of age. This youngster is healthy and normally developed. The mother has not had any miscarriages.

Personal History: Born at term, normal delivery. At birth there were found a num-



ber of congenital deformities. The lower two-thirds of the right leg was a mass of necrotic tissue which was attached to the upper part of the leg by a small band of tissue. This band was clipped into immediately after delivery. On the left foot coming off the middle of the inner side was a supernumerary toe. This was amputated at the same time. The little toes as well as the fingers of both hands were found to be deformed. A condition of syndactylism existed and the fingers and toes were separated as well as possible.

In spite of these numerous deformities the child has grown rapidly and has never been sick, with the exception of measles.

Present Complaint: On account of the de-

formity of the right leg the only way the child can get around is to crawl. Her parents very naturally wanted advice as to teaching her to walk, and for that reason she was brought to us.

Physical Examination: The child is unusually bright for her age. General condition good. Eyes, ears, nose and throat normal. Heart, lungs and abdominal viscera normal. Small patch of impetigo contagiosa on left cheek. Skin otherwise clear. No gland enlargement nor any signs of congenital lines.

Only a stump of the upper third of the right leg is present, the ends of the bones being easily felt through a thin covering of skin and subcutaneous tissue. The left foot shows metatarsal ending on middle of inner side of the foot, from which toe was amputated. The little toes and fingers of both hands show rudimentary development.

The child can stand by holding to objects, and can pick up things with fingers, but her only form of locomotion is crawling.

X-Ray Report: Hands—The carpal bones of both hands are poorly developed, only three showing. There are not any cartilaginous areas showing that would lead one to suppose others are present. The metacarpals and first phalanges of both hands are normal. On the left hand the second phalanges are poorly developed and the terminal phalanges are absent, with the exception of that of the ring finger, which is rudimentary. On the right hand the second phalanges of the little and ring fingers are poorly developed, those of the other fingers normal. The terminal phalanges of all the fingers are rudimentary, excepting the thumb, which is normal.

Left Foot: Only five of the tarsal bones can be seen, several of which are poorly developed. The first metatarsal appears only one-third the size of the other metatarsals, which are abnormally placed. Only one phalanx of the big toe is present. On the other toes the first phalanges are present but the second are rudimentary, appearing only as calcified deposits.

Right Leg: The tibia and fibula are amputated in the upper third. They are only

covered at the lower end by skin. The ends of both bones are irregular. Above the amputation the bones and joint are normal.

Treatment: The usual advice given in congenital deformities of the lower extremities is to teach the child to crawl. This is what had been done in this case. However, if the child had continued to crawl, the left leg would have naturally atrophied from disuse, and by the time she was old enough for an artificial leg to be applied, in all probability she would be unable to use it. The use of a crutch at this age was, of course, out of the question. Therefore we determined to try a "peg-leg."

At first we thought it would be necessary to remove the sharp ends of the bones in the stump before the leg was applied. As an operation was objected to, the socket in which the stump rests was padded so as to take as much strain off of the soft parts as possible. The leg applied consists of a leather socket, made after a plaster model, into which the stump rests. Around the thigh is a leather cuff that laces to hold the leg on. On either side of the cuff and socket are metal pieces with a joint at the knee. There is also a third piece of metal extending from the leather socket, which unites with the pieces from each side. Below this there is a ferrule by means of which the leg can be lengthened as the child grows.

The second day the leg was on the child was walking. For the first three weeks the knee joint was kept stiff; after that time motion was allowed. Walking at first was, of course, awkward, but at this time she is able to get around almost as well as any normal youngster her age.

Discussion.

As to the causes of congenital deformities much has been written. Alcoholism, tuberculosis and syphilis are supposed to play a part. Unfortunately we were unable to get a Wassermann on either the parents or child. The general healthy condition of the patient, together with the absence of any local signs of syphilis and the normal development of the younger child, would tend to rule this disease out as an etiological factor. For a won-

der, the mother did not attribute the child's deformity to the absurd popular belief of pre-natal impression. There were no accidents of any kind during pregnancy. Consanguinity is sometimes given as a cause, but the parents in this case were not related.

The condition of the right leg at birth can be classified as an amputation in utero. This is an exceedingly rare accident in foetal life. As to its cause there are two explanations: (1) The umbilical cord becomes tightly encircled around a part, thus shutting off its circulation, and (2) there are sometimes found the so-called amniotic bands; these bands likewise constrict a part and cause necrosis. Amniotic bands are string-like structures connecting the skin of the foetus with a point on the amniotic lining of the fetal membranes.

Aside from the extreme rarity of a case of amputation in utero and the other deformities our patient shows, the point we wish to especially stress is the successful application of a peg-leg to such a young child. On a review of the literature we were unable to find a single case reported where this has been done. McKenzie and others have reported cases where an amputation was done for congenital absence of one or both bones of the leg in young children, but no mention is made of the application of a peg-leg. Our treatment of this case we therefore believe to be original.

We desire to thank Dr. Harry Friedman for X-Raying the case.

INTERPRETATION OF BLADDER DISTURBANCE IN THE FEMALE.*

By V. D. Holloway, M.D., F.A.C.S.,
Knoxville.

I choose this subject because of some over-treated female bladders in my own practice which needed no treatment of the bladder itself, and because so many women who came complaining of bladder trouble were found upon careful examination to have no disease

*Read at Meeting of East Tennessee Medical Association, Dayton, May, 1917.

of the bladder. In the literature little is said of these vesical symptoms associated with the diseases which I am going to take up with you, excepting the symptoms associated with kidney disease.

Let us consider the anatomy of the bladder. It is a muscular bag lined with mucous membrane and covered on its upper surface with peritoneum. The musculature is divided into two groups, that which contracts and empties the bladder and that which closes its neck that it may have the power of holding urine. The nerve supply is derived from the pelvic plexus and from the second, third and fourth sacral spinal nerves. The female organs, excepting the ovaries, have almost the same source of nerve supply. From a physiological standpoint, when a certain amount of urine is in the bladder its pressure causes the desire to void and the same amount should each time cause the desire if the bladder and its neighboring structures are normal.

In considering the relations of the female bladder I wish you to refresh your minds by looking at the picture of a sagittal section of the female pelvis. (Exhibits picture.)

These relations vary as to the stage of distension of the bladder—this is important in inflammatory conditions of its neighboring organs. In the woman the bladder lies lower in the pelvis than in the man; when empty it does not quite reach the upper border of the symphysis. The fundus of the bladder is firmly connected with the anterior vaginal wall and oftentimes with the lower part of the uterus. The uterus rests on the bladder, rising and falling with each filling and emptying of the bladder. This extremely intimate relation accounts in a large part for bladder symptoms in uterine disease.

The bladder itself in women is rarely infected. Due to absence of prostate it has a lower outlet; it has a short, very distensible urethra, favoring drainage and a complete emptying. Residual urine is rare in women. Cystitis and stone formation are rare in women for the reasons given. The kidney refers symptoms to the bladder through the connecting filaments between the renal spermatic and vesical plexuses. Now, bearing in mind that anatomically the bladder and female generative organs are closely related in

their nerve supply and are so intimately associated that it is impossible to move one without affecting the other; remembering that the female bladder is rarely affected with cystitis or stone; that residual urine is almost unknown in women, and that disease higher in the urinary tract gives oftentimes bladder symptoms only, then let us be satisfied with a diagnosis of bladder disease in women only after systematically eliminating disease of organs which might give bladder disturbance. Vesical disturbance due to disease higher up in the urinary tract and such diseases, of course, are common to both sexes.

First, I will mention kidney tuberculosis. Early tuberculosis of kidney may give, and many times does, all signs of an ordinary cystitis. In the beginning the urine is usually clear, later cloudy. Such cases are often treated by good men as cases of cystitis, giving various injections, irrigations and whatnot. Cystoscopy will help clear the bladder of fault and examination of catheterized ureteral specimen usually makes the diagnosis. I could give you a number of histories of tuberculosis kidney cases who have had long series of various bladder treatments, and from their history I would have started the irrigation, too, had I not become a skeptic as to female cystitis.

Pyelitis is quite common in pregnancy and the entire symptomatology may be confined to bladder symptoms—irritability, frequency, dysuria, pyuria, etc. According to Dr. H. Kelly, this is by far the commonest symptom and the cases are often treated as cystitis. In my practice such cases usually have a tell-tale pain in the region of the affected kidney. Calculi in the kidney or ureter may give bladder symptoms alone even to stranguary (Kelly-Burnham).

Bladder disturbances due to conditions outside urinary tract. Pelvic inflammation of any kind—acute salpingitis is usually readily determined. In some sub-acute cases the bladder is very irritable and the predominating symptoms are bladder symptoms. I quote such a case. Mrs. F. came to me complaining of irritable bladder, frequency, and at times urgent urination. General examination negative.

Pelvic examination was negative save that

irritated the bladder and was not satisfactory, as patient was nervous and fat. She insisted that I treat the bladder. I did so, as I could not find anything else to lay the cause of trouble to. She got some relief. In some weeks she developed symptoms of acute appendicitis. A consultant agreed that operation was indicated immediately. When I opened the abdomen I found the appendix red and swollen and adherent to an inflamed right tube; the left tube was the seat of sub-acute inflammation. Both tubes and the appendix were removed and the bladder trouble entirely disappeared. This is an extremely common type and one seen almost every day, but usually the bladder symptoms are only a part of the pelvic upset and the blame placed where it belongs.

Another common cause of bladder symptoms is disease of the cervix following lacerations of child-birth. I see many such cases and I have a greater respect every day for the lacerated cervix. Yet only ten years ago when I was an interne at German Hospital of Philadelphia little attention was given to a lacerated cervix, and a lacerated cervix usually means an infected cervix with irritating leucorrhoea and a sub-involuted boggy uterus. In my opinion too little attention is given in most of the large clinics to the cervix.

I saw a woman a few days ago complaining of leucorrhoea which scalded her and made her very nervous and caused frequency and at times painful urination. She had just returned from one of the largest clinics—went there for diagnosis. Her symptoms were gastric and vaginal—the latter due to a badly infected cervix, the glands of which gave off a scalding discharge—she came away without her gall-bladder and had only a digital examination of the cervix, and was told that the speculum was unnecessary.

Every day women come to the office complaining of irritable bladder, frequency, etc., with leucorrhoea not due to gonorrhoea but to a diseased cervix often associated with boggy retro-displaced uterus. Some come in complaining of bladder disturbance and nervousness alone, which is entirely relieved when the offending cervix is removed and the uterus brought to its normal position by

some operation; personally I usually do a modified Gillian on these cases and my most grateful patients belonged formerly to this class of sufferers. Such cases are not only relieved by proper extirpation of cervical gland-bearing area, but their future is safeguarded against cancer, which has a great fondness for diseased cervixes.

We all know the irritable bladder of early pregnancy, which a little time relieves.

Fibroma, particularly sub-serous, may at times cause great bladder distress. I have one such case now with a sub-serous fibroma—she is up many times during the night and when rising from a sitting to a standing position has immediate desire to urinate. She has had much bladder treatment and I am confident when the fibroma is removed the bladder trouble will clear up.

Acute appendicitis often gives bladder irritability in both sexes. Where the pelvic floor is damaged in labor with a resulting cystocele and prolapse of uterus we have bladder trouble. Many times such cases come complaining of dribbling. Any jolt, like riding on rear seat of a car, causing dribbling of urine. The cause here stares you in the face if you will take the time to make a vaginal examination and have her strain a little. The remedy is obvious.

It is not the object of this paper to take up the few diseases that the female bladder really has, such as tumors, stones, etc., but they are easy of diagnosis—look in and see; if you can't see, have some one else see for you.

In conclusion I wish to state that in my opinion not one of twenty women who come to you complaining of symptoms of cystitis really have an essential cystitis. If this paper prompts a more careful pelvic examination of such cases and the arriving at a diagnosis of cystitis by exclusion of the conditions mentioned, then I am satisfied. "Remove the cause and they will get well."

Much valuable food material is diverted in the manufacture of alcoholic beverages.

Removing the cause before it becomes a result is the best kind of public health work.

THE DEVELOPMENT OF MEDICAL EDUCATION AND ITS EFFECT UPON THE PROFESSION.*

By Joseph L. Miller, M.D.
Nashville.

We are living in an age of rapid transformation in medical education. So rapid and fundamental are these changes that we older practitioners, like our forefathers, when the science of bacteriology flashed into the field of medicine, find it difficult to adjust ourselves to the new order of things and may even question whether this new development is a fad or a foundation stone. When we consider these changes and proposed changes from the disinterested viewpoint of the teacher we must realize that medical education is gradually being established on a sane and rational basis.

In order that we may appreciate our present position and the plans for future growth it may be wise to briefly review the development of medical education in this country. The medical college in America is a comparatively modern institution, as little more than a century has elapsed since its birth. The beginning of the nineteenth century found only three medical schools in the United States—Harvard, Dartmouth, and the University of Pennsylvania. These early schools had a very restricted curriculum for the reason that medicine was in its infancy, and a limited faculty was all that was required to give the students a fair knowledge of medicine as then developed. It was only much later with the development of the biological sciences that medicine expanded and at the same time assumed the character of a science. During these early days entrance requirements were not considered, as state boards had not come into existence. A diploma granted by one of these schools was all that was necessary in order to engage in practice. In 1827 in New England an effort was made to establish some standard of preliminary work, but those schools adopting it

were soon compelled to abandon their plan, as other schools failed to follow up and they foresaw empty class rooms unless they returned to their previous requirements, or rather lack of requirements. It was not until 1846, when through the efforts of Dr. N. S. Davis the American Medical Association was formed for the purpose of establishing certain entrance requirements and standard curriculum for medical education. It is this organization that has been very largely responsible for the standardization of medical education in the United States. Previous to this period the medical school consisted largely of certain courses of lectures, not clinics, which the medical student was able to complete in one year. With the proper method of teaching it would have been more feasible to cover the field of medicine in this time than it is at present in four years.

Early in the nineteenth century there developed what is known as the proprietary medical school, an institution which has played a wide role and exposed us to much unanswerable criticism. Much as we may discredit the principle upon which this type of school was established, apparently it was a necessary cycle through which medical education must pass. Our state universities, which should have taken charge of this work as they did in Germany, had limited funds and were often situated at a distance from large cities with their abundant clinical material, and were furthermore unable, on account of their location, to obtain medical teachers with wide clinical experience. The privately endowed institution located often in the large city was slow to take up medical education. So medical men throughout the country undertook the organization and financing of proprietary schools. In many instances, with the best of intentions to offer opportunity for the study of medicine, the temptation to use these schools for commercial purposes was so great that perhaps in spite of the purpose for which they were founded there gradually crept in such a spirit of commercialism that American medical education became discredited abroad, and many years will elapse before confidence will be restored in the efficiency of our educational system. With no endowment, expenses and

*A lecture delivered to the Medical Students of Vanderbilt University.

dividends (the latter often very generous) were paid from the students' fees and in addition the teacher found a further source of profit in the consultations referred to him by his former pupils. As students' college fees at this time were not large, it was necessary in order to pay dividends to accept all applicants and to minimize expenses. The former was accomplished by ignoring entrance requirements, the latter by limiting the college equipment to a few class rooms and a clinical amphitheater. To show you the extent to which the proprietary school developed in the United States and Canada, the last one hundred years have given birth to four hundred and fifty-seven medical schools. It is needless to say that many of these were short-lived and that today this type of school has been practically eliminated. The soil of Illinois was responsible for thirty-nine colleges of this character, and as late as 1910 the City of Chicago had ten schools in this class. Your neighbor state, Missouri, was even more prolific, as it developed forty-two schools to which the term proprietary might be applied. This evil was not confined to the Middle West, as we find New York State credited with forty-three and Pennsylvania with twenty. Understand that many of these institutions had no right to be called medical schools. Not only did they not have laboratories or equipment, but with very few exceptions they were not provided with any sort of adequate clinical material. This, combined with the low entrance requirement, justly discredited the American degree of M.D., for the students of these schools had the same right to be known as doctors of medicine as the graduates of highly creditable institutions.

The doom of this type of school was sounded when concerted action was taken to raise pre-medical requirements and to standardize the time spent and the subjects covered in the medical curriculum. State boards enforced these requirements, thus barring students from the low-grade schools. With these increased demands the proprietary school could not only not pay dividends, but they were unable to meet expenses, as the prospective medical student, if he must have certain pre-medical requisites, will as a rule en-

ter the better class of school. Strictly enforce a uniform preliminary requirement and the low-grade medical school automatically disappears.

As medicine reached the point where it could be properly called a science, the various state universities and endowed colleges became anxious to add a medical department to their institutions. As a result of the importance of medicine to the community at large and on account of the wonderful developments especially of preventative medicine and sanitation, there is at present no department of a university to which people of means are so ready to make generous donations.

Along with this demand for certain pre-medical requirements there was an effort made to improve the character of the teaching in the fundamental branches. In the proprietary schools the teaching of anatomy, physiology, etc., was conducted, of course, by practitioners, who, in addition to holding a clinical chair, often combined with it the teaching of one of the fundamental branches. The professor of anatomy was not infrequently also head of the department of surgery, or rather the entire department of surgery, as this system did not tolerate rivals who might later participate in the good will of the students. One ambitious member of the profession paid \$3,000.00 for the combined chair of gynecology and physiology, expecting to reap his reward from consultation fees obtained through his students. When the suggestion was made that a second man be placed in the department of physiology in order to improve the teaching, he objected to any such division of spoils.

In these early proprietary schools, and let us bear in mind that for three-quarters of a century probably a majority of the profession were educated in schools of this class, little or no attention was paid to the teaching of the fundamental sciences. Suitable laboratories or equipment were, of course, lacking. Even many of our so-called university medical schools or those affiliated with endowed colleges continued to have the fundamental branches taught by practitioners, arguing that the only person properly prepared to teach these subjects to the student was some

one familiar with the practical phases of the fundamental sciences. This argument was in a sense true, and in the days when only little time was devoted to such studies as physiology it was necessary that the student be given only the essentials. Unfortunately the teacher's knowledge of clinical medicine was usually far in excess of his learning in physiology and consequently the latter suffered. With this order of things there was little opportunity for the biological sciences to obtain their deserved prominence, as they were always subservient to the clinical branches. On account of lack of time the busy practitioners in these departments had no time for anything but didactic teaching. If a young man, not yet actively engaged in practice, his time was devoted to acquiring a greater knowledge not of physiology but of clinical medicine. We must bear in mind that during this period the entrance requirements were so low that the student came to the medical school with scarcely any knowledge of these fundamental sciences.

The placing of these chairs in the hands of full-time men mark a radical and most beneficent step forward. Laboratories must then be provided, equipment purchased and more time devoted to the teaching of students. None of us would consider it at all desirable at present to revert to the former practice of placing practicing physicians at the head of these departments. The first two years of medical education was now placed on a rational basis.

An effort was then made to provide more adequate clinical facilities for the last two years, as in chemistry and physiology the didactic method of teaching had been supplemented by laboratory work, where the student could actually work out problems and demonstrations with his own hands; an attempt was made to introduce this same principle into clinical teaching. The dispensary and the hospital were used as a laboratory, where the student could not only come in actual contact with the patient, but also where he was permitted to study him at his leisure. There was abundant dispensary material for this purpose, but the problem of suitable hospital facilities was not so easily arranged. Comparatively few of the medical schools

owned and controlled their own hospitals. As a rule an agreement was entered into between the college and the most convenient hospital whereby for the prestige which this affiliation would give to the hospital the faculty was permitted to use certain patients for teaching purposes. As a rule this arrangement did not meet the need for increasing bedside work by the student. It did not permit that free use of the hospital essential to the proper teaching of medicine. The hospital was very apt to consider that it was not wise to let it be widely known that their institution was extensively used for teaching purposes. This was not only applied to private or semiprivate hospitals, but to many of our large free city hospitals, especially those politically controlled. In the lay mind, medical teaching was associated with experimenting upon the sick with little consideration for the effect on the patient. Happily for the public, and especially the patient, this idea has been generally abandoned. The public is gradually learning what the profession has long known, that the safest place for a sick individual is in a teaching hospital. Hospitals are also realizing how difficult it is to maintain high standard in non-teaching institutions. They were, however, very loathe to grant to the colleges the privilege of adequate bedside teaching. Furthermore, comparatively few of the patients in our ordinary hospitals can be used for clinical purposes in the modern manner, viz., by allowing the student to carefully question and examine them. The value of any hospital to a teaching institution is measured by the number of beds that may be used in this manner. With few exceptions colleges have found such hospital affiliations unsatisfactory and not meeting their requirements. In the majority of cases there is a conflict between the commercial interests of the hospital and the desire on the part of the staff to admit all patients who are especially desirable for teaching purposes without regard to whether they are able to pay. We can readily see that for teaching purposes a hospital should have a large number of free beds. These can best be filled with selected material from the out-patient department. When this plan can be carried out fully, fifty

beds may furnish more clinical material than one hundred beds filled indiscriminately.

For the past few years efforts have been made, more or less successfully, to arrange with existing hospitals for a more satisfactory agreement by which the school may receive more abundant and satisfactory clinical material. The ideal arrangement, however, is for the school to own and control its own hospitals, just as it controls its laboratories. Such a plan solves at once the question of clinical material of suitable character and makes it possible to use it for teaching purposes in the most satisfactory manner. It, however, requires very large endowments, as the majority of beds should be free. The money required to carry out such a plan will for many years in most institutions be prohibitive. A much smaller sum of money spent on existing hospitals for the endowment of free beds may be utilized for obtaining suitable clinical material. Where our free city hospitals are not too involved in politics it would be a most satisfactory business proposition for the city to turn over to a medical school the responsibility for the care of the patients. This would not only be of the greatest benefit to the sick poor, but would be of the greatest aid to medical education.

We have already referred to the great advantage of having the first two years of medicine taught by full-time men. The present trend of medical education is to have the last two years cared for in the same manner. I undertake the discussion of this subject with the same hesitancy, as I know the feeling among clinicians is that these years should be taught by men actively engaged in practice. As a teacher of medicine for twenty years, I can only say that in the schools with which I am very familiar it cannot be said that the present plan does not have many objectionable features. The average head of a clinical department, at least in most of the schools in the Middle West, receives little if any direct monetary compensation. This often brings with it a laxness of responsibility. A livelihood must be earned; usually the head of such a department is a man of unusual ability and has a wide reputation. He almost invariably for this reason has a large private practice which consumes much of his

time. He rarely has sufficient spare time to devote to study to keep fully abreast of the advances in medicine. His opportunity for reading is usually after a long and fatiguing day. On account of the uncertainty of his time he is often unable to properly prepare for his clinic. He has little leisure for pure research, a very essential thing in order to view clinical medicine in an impersonal manner. The number of hours he spends in teaching is apt to be limited and consequently he does little bedside instruction, but endeavors to reach all the students in an amphitheater clinic. His medical teaching is after all a rather small part of his life. Now do not misunderstand me that this rather doleful description applies to all men holding these positions, for we have many men—and the Southern medical schools have at least their full proportion—who are willing at great financial sacrifice to make their position in the school of first importance. If such examples were more common it would not be necessary to discuss the desirability of the full-time clinical chair. However, experience has shown that frequently the clinical teacher yields to the lure of private practice at the expense of his teaching. It is in the endeavor to so arrange matters that such a breach of trust is not possible, that the full-time clinical positions have now been established in several of our schools. Watching the present tendency of medical education, we must believe that just as rapidly as endowments can be acquired such chairs will be established. I chanced to be a student in a medical school during the period of change from the practitioner to the full-time man in physiology, pathology, etc. I recall the numerous objections from the faculty and students to such a change. I believe it is not improbable that there are students here today who will see the clinical branches taught by full-time men in perhaps the majority of our medical schools and will look back to the present method as one of the evolutionary changes through which medicine had passed on its way to better things. We should bear in mind that the great development in every department of medicine, with consequently steadily increasing literature, which in some of the specialties is now greater than the literature of

the entire field of medicine fifty years ago, makes imperative such a change, as he who keeps abreast of progress cannot at the same time be too actively engaged in practice. So that these proposed changes are in a large measure the result of the rapid strides made by medicine and thus have necessitated the divorcing of teaching from private practice. We are now planning in the immediate future for a university hospital and medical school at the University of Chicago, where the entire faculty, with the exception of a limited number of lecturers, will be full-time men, devoting all of their time to teaching, research, and the clinical study of patients in the hospital.

You may ask, what advantage is the medical student to derive from this change? The answer is perhaps problematical. It would seem, however, we might answer briefly by saying, the same advantages as were derived from the corresponding changes in the first two years of the medical curriculum, viz., improved methods of teaching and greater scientific accuracy.

With these greatly improved opportunities for the study of medicine, what preparation should be demanded from the student in order to take advantage of them? You may surround the medical student with opportunities, but unless he comes with a properly prepared mind and with a proficient knowledge of the biologic sciences he cannot appreciate nor take advantage of this new development. Not merely is a poorly prepared student handicapped during his college days, but unless he makes a special effort to later acquire that knowledge he should have had earlier, this will remain with him throughout his medical career. In the days when medicine was not a science, pre-medical preparation was not so essential at least to financial success. That day is now past. No physician without adequate pre-medical training can hope in an intelligent community to permanently maintain a position of pre-eminence. It is always a most pathetic circumstance to have as an interne a bright and painstaking interne, but who, without a knowledge of the biological science, is vainly struggling to grasp the problems which are constantly arising. To him medicine is more or less of a

mystery, something to be memorized and not reasoned out. He is in much the same position as an individual who attempts to understand geometry without a previous knowledge of mathematics, or as he who attempts to read Cicero without a previous study of Latin grammar. It is true if he has sufficient persistence he may struggle through and acquire a fair knowledge of these subjects, but always at great sacrifice of time and energy, and furthermore what should have been a pleasure is a drudgery. This comparison is not overdrawn—medicine is a science built upon pathology, anatomy, physiology and chemistry. It is in the main a special branch of these sciences, as disease is largely pathologic physiology or chemistry. To the person thoroughly trained in histology, microscopic pathology is easily grasped. It is a study of the variation from the normal, and in the same manner disease is a variation from the normal. To the student well prepared in the biologic science, medicine is a fascinating study filled with problems which he readily recognizes. The zest which is thus added to the practice of medicine renders almost any early sacrifice worth while. A few years ago I had the pleasure of studying for a few months with the professor of medicine in a German University. This man had been trained as a physiologist. His research had been conducted along physiological lines; so devoted had he been to his research that he could scarcely be considered highly efficient as a clinician. To him disease was abnormal physiology, and it was really fascinating to listen to his clinics. The simplicity of his explanations led you to say, "Why did I not think of this subject in this manner before?" Again let me repeat, a thorough knowledge of the biologic science gives to medicine a charm that the ill-informed can never enjoy. To try to build in medicine without a knowledge of the normal means the erection of a structure insecure, mystifying, and a source of annoyance rather than pleasure. Your institution next year will demand what may be called the standard requirement of two years of pre-medical college work. Some of you may feel that such a requirement is unnecessary. Let me assure you as you advance in the practice of medicine you will never regret, but must

be grateful that you entered an institution demanding this preparation. You are undertaking a life work and a year or more spent in preparation, if it does nothing more than add to the pleasure of the practice of your profession, will have been well worth while. It will do much more than this—it will give you a standing in the community and in the profession that many alone could not purchase. We older practitioners of medicine must envy the medical student of today and we believe we can see in the not distant future a medical profession that will command the confidence and respect of all thinking people, as the elimination of the ignorant physician sounds the death knell of quackery—that thorn in the side of medicine. To you gentlemen gathered here, if I were asked to advise, I would urge that you devote yourself assiduously to the opportunities with which you are surrounded. In your spare time, not only during your student days but throughout your medical career, devote some time to the perusal of physiology, chemistry and pathology, and endeavor to keep in touch with their development, for they must always remain the spring from which gushes the pure science which moulds and determines the lines along which clinical medicine will develop.

TRANSVESICAL PROSTATECTOMY.*

By Geo. R. Livermore, M.D., F.A.C.S.,
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Transvesical prostatectomy means removal of the prostate by the suprapubic route. The method of the late Dr. P. M. Pilcher seems the most rational to me, and after using it for some time, my results have been so satisfactory I am convinced that it is the operation of choice in the majority of cases.

Prostatectomy should be performed in every case, regardless of the patient's condi-

tion, in two stages. This may sound dogmatic, but when we consider the many advantages the two-stage operation possesses it justifies one in being dogmatic. From my own experience and from reports of other genito-urinary surgeons, I am sure it has been one of the chief factors in reducing the mortality rate.

The success of this operation depends also upon the pre-operative preparation, for hypertrophy of the prostate is an old man's disease and the majority of them are poor operative risks, therefore, regardless of one's skill as an operator, there is no justification for failing to get these patients in the best possible condition to withstand so trying an ordeal. This consists in a thorough examination of the patient. The heart, kidneys, lungs and blood vessels should be carefully studied, not by one test, but (especially in the case of the kidneys) by several tests, for in this way only are we able to accurately determine whether the patient is a fit subject for operation. If not in condition, many can be made so by proper treatment, and in those who can not, suprapubic drainage through a Pilcher button drainage tube gives relief from the retention, tenesmus and pain and makes the patient far more comfortable than he could ever hope to be without removing his prostate. I have done suprapubic drainage in a number of patients who were unfavorable operative risks and always with satisfaction to myself and the patient. One, a physician with a dilated heart and double mitral and aortic lesions, was able to practice his profession in comparative comfort for two years.

My reasons for advising the two-stage operation in every case are as follows: The sudden relief of back pressure on the kidneys, resulting from draining the bladder, causes a congestion of the kidneys and, even in men whose urine is apparently normal the following day, casts and albumin are present and the output is greatly reduced. If this is true of kidneys that are in good condition, you can imagine the effect upon those that are diseased. To a certain extent this effect can be mitigated by the intermittent introduction of a retention catheter, but, on the other hand, a retention catheter is rather uncom-

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fortable and in some cases unbearable without an opiate and is not devoid of danger. By doing the operation in two stages the patient is not subjected to the dangers of kidney congestion and the shock of a serious and formidable operation at the same time.

He is also given an opportunity to eliminate the urinary and septic products he has absorbed on account of retention of urine and back pressure on his kidneys, and kidney cells that have been damaged but not entirely destroyed by this back pressure soon regain their tone and begin to functionate.

The first stage can be performed under local anesthesia (novocaine preferably), thus relieving the patient of the shock and strain on the heart and kidneys incident to a general anesthetic. It also shortens the time of the second stage, thus diminishing shock, as the bladder is already opened and it is only necessary to dilate this opening to have all the room necessary for removal of the prostate. On account of the drainage the bladder has been put at rest and the foul retained urine drained off. This allows the inflamed bladder wall, with its dilated veins, to approximate the normal and the periprostatic inflammation to subside, which of course diminishes the danger of hemorrhage when the second stage is done.

The first stage consists in opening the bladder suprapubically and inserting a drainage tube. The bladder is filled with boric acid solution and after cocaineization of the midline from the symphysis pubis to near the umbilicus, the incision is made through the skin. The fascia is then cocaineized and divided and the muscles similarly treated, separated and held apart with retractors. After cocaineization, the index finger, covered with gauze, is pressed downward behind the symphysis and in a sweeping motion the peritoneum is stripped back to the upper limit of the bladder. The bladder wall is cocaineized and then picked up with two sutures for guides and incised. A large $\frac{1}{2}$ -inch drainage tube, with a rounded end and a hole cut in each side near the end, is sutured in the bladder by a purse-string stitch just as a tube is sutured in the gall bladder.

The fascia is sutured separately with inter-

rupted chromic gut sutures and the skin with silk worm gut. It is best to put a silk worm gut stitch through the tube and then through the skin in order to make sure that the tube will not slip out. If no dead space is left there is no need for drainage of the space of Retzius.

The after-treatment of the patient following the first stage is very important and the result of the second stage depends largely upon the care we exercise to bring these old men into proper condition to withstand enucleation of the prostate. After completing the first stage—viz., suprapubic cystotomy—the patient is returned to bed, wrapped up warm and if his pulse is weak he is given caffeine sodium benzoate gr. $\frac{1}{2}$ q. 6 h., urotropin gr. vii ss. in a glass of water t. i. d., and nitroglycerine gr. $\frac{1}{100}$ q. 4 h., if blood pressure is high or kidney congestion evident. He is given large quantities of water (distilled water is best), at least a glass every hour. Saline $\bar{5}$ viii with soda bicarbonate $\bar{5}$ ss per rectum, if for any reason he does not take enough water by mouth or urinary output is markedly diminished. His diet should be liquid until the kidney congestion is relieved and then light and nourishing. He should be propped up in bed the following day and out of bed in 36 to 48 hours. Cabinet baths also help especially in cases with high blood pressure. Potassium iodide in small doses in essence of pepsin is given for its absorptive effect.

Daily irrigation through the tube, especially where there is marked cystitis, allays irritation and aids in reducing the congestion of the bladder and prostate, thus diminishing the danger of hemorrhage. In cases with a large amount of retention and uninfected bladders, it is impossible to prevent infection, and it is in this class of cases where the two-stage operation has done such good service. Dr. Cabot has suggested the advisability of administering colon vaccine prior to cystotomy in order to build up the patient's resistance to infection. When the patient's general condition is such that we feel he can withstand the dangers incident to the more severe operation of prostatectomy—this to be determined by a comparison with our find-

ings prior to the cystotomy—the second stage of the operation is performed. The patient is prepared as follows: Some laxative the night before and an enema in the morning. Sleep is an essential factor and I see that my patients sleep the night before this operation, aided if necessary by sodium bromide and trional. One hour before he is sent to the operating room he is given a hypodermic of morphine gr. $\frac{1}{4}$ and hyoscine gr. $\frac{1}{100}$ and 8 ounces of saline, to which a half dram of sodium bicarbonate is added, is given per rectum. The tube is removed before he is sent to the operating room and the field of operation shaved, cleansed and painted with iodine. After he is placed upon the operating table, he is again prepared, towels arranged and everything made ready before the anesthetic is begun. I use gas and if necessary supplement with ether. As soon as the patient is under the influence of the anesthetic, the enucleation of the prostate is begun. The index finger or preferably the index and middle fingers of the right hand are introduced into the bladder through the suprapubic wound, which as a rule is of sufficient size and, if not, can usually be easily dilated. In large fat men, however, and especially in patients whom we have drained for more than ten days, two lateral incisions are sometimes necessary, but even in these cases it is only necessary to incise the skin. With the index finger of the left hand in the rectum, counter pressure is made on the prostate. The finger in the bladder is passed into the internal meatus, the capsule of the prostate ruptured and the finger pushed forward to the anterior limit of the prostate, or as near it as possible. With the finger in the capsule, with a sweeping motion laterally the prostate is enucleated. This is usually easily done and consumes only a few minutes, but in some cases it is very difficult and time, skill and patience are required. It is in this latter type that hurry, inexperience or playing to the galleries often result in a tear into the rectum. After the prostate has been freed from its capsule, it is grasped with bullet forceps and withdrawn. The interior of the capsule is then carefully examined to make sure that no nodules have been left. The bladder is ir-

rigated with hot saline and at the same time the prostatic bed is freed of all clots kneaded between the fingers in the bladder and the rectum. One danger to be avoided is the leaving of a small nodule or a particle of capsule in the bladder to act as a nucleus for a stone. This can be prevented by thorough irrigation of the bladder and wiping out the bladder carefully with gauze. A steel catheter is now introduced through the urethra into the bladder. The urethral tube of the Pileher bag is slipped over the end of the catheter and sutured to it. As the steel catheter is withdrawn, the urethral tube of the Pileher bag follows it and the bag is pulled into the prostatic bed. As this is done all tags of tissue are pushed in front of the bag and thus brought in contact with the denuded interior of the capsule. The bag is then inflated, thus filling the space originally occupied by the prostate and effectually controlling all hemorrhages. After a few hours the air may be allowed to escape and the bag collapses. If there is evidence of hemorrhage it can be dilated again. A large $\frac{1}{2}$ to $\frac{3}{4}$ -inch (Freyer) drainage tube is placed in the bladder through the suprapubic opening and sutured in position by a silk worm gut stitch through the skin. The suprapubic wound is closed to the tube with silk worm gut sutures and dressings applied. The patient is then returned to bed, warmly covered and surrounded with hot water bottles and the Murphy drip of saline and soda given per rectum. Nitroglycerine gr. 1-100 q. 4 hr. if blood pressure is high, and codeine gr. $\frac{1}{2}$ p. r. n. for pain. The patient is given distilled water to drink as soon as his stomach will tolerate it and at least a glass every hour thereafter. The nurse is instructed to change the position of the patient at frequent intervals in order to avoid hypostatic congestion and pneumonia. Caffeine sodium benzoate gr. $\frac{1}{2}$ q. 4 to 6 hours if pulse is weak or urinary output insufficient. I do not irrigate the bladder unless the tube becomes plugged and then only enough boric solution is injected to start the drainage. The Pileher bag is removed in 24 to 48 hours. Some patients complain very little of the Pileher bag, while others suffer intensely and must have morphine for relief.

The large suprapubic drainage tube must be removed prior to withdrawal of the Pilcher bag. A smaller Pilcher or Pesser tube is then introduced into the bladder through the suprapubic wound and held in place by adhesive strips. The Pesser tube remains in about ten days. After a week it can be clamped and as the urine accumulates the patient is told to try to void in the natural way. It is remarkable how soon they learn to do so. After a few days the tube is removed entirely and the wound allowed to heal. With the high incision in the bladder and adhesive strapping of the wound it is surprising how quickly the incision closes. Many of my patients leave the hospital in a week and the suprapubic wound has completely healed in from three to six weeks. I am firmly convinced of the absolute necessity of getting these patients out of bed as soon as possible. My patients are propped up in bed in twenty-four hours and out of bed in forty-eight. This, however, is not a routine and must be governed by judgment and common sense.

The dangers of prostatectomy are shock, hemorrhage, uraemia, sepsis, thrombosis and pneumonia. Shock is guarded against by gas-ether anesthesia, rapid removal of the prostate, and warmth, and when it occurs by saline intravenously and stimulation with caffeine, sodium benzoate and digitalis. Hemorrhage is controlled by the Pilcher bag or suture of capsule, gauze plug or packing; secondary hemorrhage may occur any time after removal of Pilcher bag or gauze packing. It is especially liable to occur after removal of the drainage tube, when efforts of patient to void dislodges clots. Hot saline irrigation, kneading, prostatic bed and reintroduction of the large suprapubic drainage tube usually suffices; if not, the Pilcher bag can be reintroduced.

Sepsis: Urotropin before operation and silver nitrate irrigation of bladder. Waiting after first stage till bladder is clean or patient has built up sufficient resistance. When it occurs, nitrate of silver solution intravenously.

Uraemia: Hiccough is a bad sign and usually indicates failing elimination. When it

occurs, begin saline intravenously. Give diuretic, caffeine sodium benzoate and large quantities of water by mouth and saline by rectum. Hot packs and purgation. If patient's condition is otherwise good, hiccough is not alarming; I have seen it last a week or more without serious consequences.

Pneumonia is prevented by not allowing patient to get wet and changing his position often and getting him up early.

When thrombosis occurs we are helpless.

The results of transvesical prostatectomy are very satisfactory. In some cases, however, the suprapubic wound is slow in healing, but if the incision in the bladder is high and all obstruction has been relieved, it will undoubtedly close. The insertion of an indwelling catheter will hasten the closure. Contracture of the prostatic urethra will sometimes result. I have seen two cases where complete closure resulted and a filiform could be introduced only after many tedious attempts. Gradual dilation and the introduction of a retention catheter for a week, followed by gradual dilation to 32 F., will bring about a cure.

Partial incontinence will sometimes occur from partial contraction of the prostatic urethra or from tags of the capsule being caught in the sphincter. Dilation and removal of the tags of capsule will give relief. Calculi may result from particles of tissue or small calculi overlooked at the time of operation, and may be avoided by thorough irrigation and wiping bladder carefully with gauze.

Epididymitis results in 30% of cases. Supporting the testicles may prevent it.

DISCUSSION.

DR. J. L. MCGEE, Memphis: I think that this paper is most thorough. The success of handling these cases depends on four things: First, on thorough preparation; second, the two-stage operation; third, the choice of the anesthetic; fourth, the after-treatment.

As to the preparation, I can add nothing to what the essayist has said. The two-stage operation is generally accepted. The supra-public cystotomy can be done under local anesthesia. The bladder incision should be made high and only large enough to allow the passage of a half-inch tube, so that the contractions of the bladder will help retain it. The proper anesthesia: I have had four cases which I have done under

sacral anesthesia, novocain-sodium-chloride-adrenalin solution into the sacral canal enough for the patient to get seven and one-half grains of novocain. This will produce sufficient anesthesia for the operation. This anesthetic fails in some cases. In three out of four of mine it was sufficient. Then remove the gland by means of the finger in the bladder and pressure in the rectum. In those cases which fail to respond to sacral anesthesia, give morphine $\frac{1}{4}$ and hyoscine $\frac{1}{100}$ two hours before the operation and then one hour before give morphine $\frac{1}{8}$ and hyoscine $\frac{1}{200}$, which puts the patient in condition. The patient should be watched, especially the respiration, very carefully during the operation and for twenty-four hours after. After-treatment: The hemorrhage usually results from putting the tube in the bed of the gland. I irrigate the bladder and then insert the tube not more than one-half inch through the bladder wall. In completing the operation I make a crescent-shaped niche in the large drainage tube, large enough to introduce a catheter, which can be pushed down to the bottom of the bladder. The fluid rises to the large tube and the drainage apparatus can be connected and the fluid will come out without any soiling. Irrigation can be accomplished as often as necessary without traumatism to tissue.

DR. E. M. HOLDER, Memphis: There is one point which the essayist failed to bring out, and that is that in opening the bladder through the suprapubic route we have an opportunity to examine the bladder wall for papillomata, carcinoma, etc., which with proper light can be seen very easily. This one thing is very much in favor of the suprapubic route. All of the most prominent men, except Hugh Young, take this route. The essayist has worked out the details very nicely and I have nothing to add. I adopted the two-stage operation long ago and the anesthetic as suggested by him. Sacral anesthesia fails in some cases, so we should have gas present if it does so. Gas is the safest general anesthetic and should be next of choice to sacral.

DR. W. T. BLACK, Memphis: There is no class of cases which require more careful study. The essayist forgot to mention the fact that a functional test of the kidneys should be made previous to operation. There is less mortality in the two-stage operation. In the last number of *Annals of Surgery* the essence of this work is shown in detail. A great many claim that drainage by urethra is preferable, claiming as good or better results. Personally, I do the suprapubic first. There were points well brought out by the essayist, as high opening, large tube, not inserted to the floor of the bladder, silkworm gut sutures rather than catgut.

DR. ROBERT MANN, Memphis: I realize that the suprapubic route is the most commonly used, but there have not been given satisfactory rea-

sons for doing so. I still prefer the lower method. It seems that there are some of the fundamental principles of surgical teaching violated in going above. I give my reasons for the lower route: The more vascular a tissue is, the more readily it heals and the more resistant to infection. The lower route is very vascular, the upper not at all. The upper is very close to the peritoneum, the lower is not.

By the upper method you are draining uphill, by the lower gravity aids us. Is the control of the urine due to the sphincter vesici, or is it the compressor urethri? If it is the sphincter, you can by the lower route come up and get the gland without tearing the fibers; by the other route they are torn. If it is the compressor, you can see it and avoid it by the lower, by the upper you cannot. By the upper the view of the interior of the bladder is obstructed by the hand, by the lower you can see it. By the upper you advise putting finger into the rectum and pushing against the urethra, thus increasing the liability of a fistula. There is the question of taking away part of the urethra. By the lower route you can leave this, thus minimizing the probabilities of stricture.

I have not been convinced that the upper is the method of choice. True it is easier to perform, but, for the sake of the patient, this point should under no circumstances be considered.

DR. LIVERMORE (closing): I thank the gentlemen for the discussion of my paper. I did not consider the merits or demerits of the methods of operation, but I prefer the upper. I found that in the East most of the men were not using sacral anesthesia on account of the high percentage of failures. Some use novocain through the suprapubic opening by means of a long syringe. In regard to hemorrhage, Dr. McGee said that it was not a factor except when the tube was put too low. Of course, hemorrhage will be caused by the contractions of the bladder by causing the tube to dislodge clots. I use the Pilcher tube and hot saline irrigations. I have had two cases of severe secondary hemorrhages. In these cases they usually follow the removal of the tube, caused by contractions of the bladder. Kneading between the fingers and hot irrigations are employed and then the tube is replaced. The Pilcher tube is dilated and this effectually controls the hemorrhage. In draining by catheter you have an opening already made, so that much time is saved and shock is diminished. Dr. Mann mentioned injury to the peritoneum, saying that it was more likely by the upper route. If this happens, there is only one thing to do, which is very easy, that is, sew it up. After all, results is what counts and you get them by this route. Incontinence is more frequent after the perineal than after the suprapubic operation.

THE PROBLEM OF PUS IN THE PERITONEAL CAVITY.*

By A. B. Cooke, M.D.,
Los Angeles.

Senior Attending Surgeon, L. A. County
Hospital.

The problem of pus in the peritoneal cavity includes a number of collateral problems of the first importance, such as the source and extent of the infection, lavage, posture and drainage, peritoneal adhesions; and each of these presents many points upon which surgical opinion is not yet crystallized. It would be manifestly impossible to cover the subject with any degree of thoroughness in the time limit imposed. The purpose is rather to provoke a free general discussion in order that the numerous problems involved may be illuminated by the personal experience of many observers. In the absence of anything new or definite to offer in the way of a solution, I should perhaps apologize for occupying time with the presentation of such a well-worn theme. My conception of its importance and my conviction that, until finally solved, it can not be too often or too earnestly considered, are the only excuses I have to offer.

There can be no question that pus in the peritoneal cavity is met with much less frequently now than formerly. This is due primarily, of course, to the great improvement in skill and diagnostic methods of the profession. Popular awakening as to the significance of abdominal symptoms and the wisdom of seeking medical advice early has also worked to this end, as has the gradual but marked diminution of the dread with which surgery was wont to be contemplated. But in spite of these beneficent influences the condition is still encountered with lamentable frequency, and the several problems involved continue to demand our best thought and effort.

General peritonitis probably occurs much more rarely than the rather frequent reference to it would indicate. When it does oc-

cur it is practically always fatal. What is usually meant would be better expressed by the term diffuse peritonitis, meaning thereby that variety in which the infectious process is not limited or walled off by protecting adhesions. One of the remarkable facts about peritoneal infections, which neither the bacteriology nor the site of the primary lesion serves to explain, is that in one case the inflammatory process is definitely localized, while in another, apparently similar in every respect, no such tendency is exhibited.

The First Indication.

Whether the peritonitis be diffuse or localized, when pus has formed the first indication is, of course, to evacuate it. The only exception to this rule is possibly gonorrheal salpingitis, the idea being widely held that it is safer to defer surgical intervention in these cases until the active inflammation has subsided. Other things being equal, the less virulent the infection the safer the surgery. But in pelvic infections we have always to bear in mind that important organs are threatened—that delay will mean the rapid and complete destruction of their functional integrity. Personally, I can see no more valid reason for the policy of delay in the case of acute pyosalpinx, gonorrheal or otherwise, than in the case of acute appendicitis. In the aggregate not only will there be less danger to life in prompt surgery, but far less permanent damage than if the plan of waiting for subsidence of the acute symptoms is followed. A crippled and distorted appendix is of little moment except insofar as it may invite future attacks; but a crippled and distorted oviduct means a definite impairment of its possessor's highest function, results in chronic invalidism, and by extension to the opposite side is practically certain to end in complete and permanent sterility.

How shall the focus of infection be handled? When the organ or structure involved cannot be repaired so as to shut off the source of contamination, the only recourse is to remove it. This is a sound surgical rule with only exceptions enough to prove it, whether the origin of the suppurative process be gall bladder, appendix, or Fallopian tube.

*Read before the Los Angeles County Medical Society, March 1, 1917.

Discussion of this question, more especially as it refers to the appendix, in the recent past has been general and more or less acrimonious. In cases in which the infection has not been limited to the immediate vicinity of the part involved it is generally agreed that the diseased appendix should be sought and removed. But in definitely circumscribed abscess cases no such concord of opinion prevails. A considerable proportion of men of wide experience maintain that the only safe plan is to merely drain the abscess at the primary operation, reserving the radical work for a later date. Another equally authoritative group contends that always, unless the patient's condition is such as to forbid consuming the time required, one operation should suffice; that failure to find and dispose of the appendix is a confusion of lack of confidence in one's surgical technique.

The advantages of the latter plan are too obvious to need enumeration. The only question involved is one of safety. I have come to believe that the danger is much less than has been feared. When the pathologic process has progressed to pus formation the patient's resistance is correspondingly increased and the breaking up of adhesions does not constitute the dire menace sometimes described. This is the only means by which secondary abscess pockets, by no means infrequent, can be discovered and dealt with. To be sure, I can conceive of cases in which one should hesitate to inflict the amount of traumatism necessary to locate and remove the appendix; but in recent years such instances have been extremely rare in my experience.

Lavage. Topical Applications.

The last few years have witnessed a marked revival of interest in lavage in the treatment of septic peritonitis. While its use was never wholly abandoned by a few operators, it was formerly held very generally that it was much more potent for harm than for good, in that it served to disseminate the infectious material, and because of the traumatism and increased adhesions following its employment. At present it seems to be coming into favor again. In selected cases where nature has had no opportunity to form protecting adhe-

sions, e.g., penetrating gunshot or stab wounds involving the intestinal tract, it is the consensus of opinion that careful lavage should be resorted to as a routine measure. Indeed, advocates are by no means lacking of its employment in other cases in which encapsulation of the primary lesion has not been effected. While I agree that in this latter group of cases lavage may sometimes serve a useful purpose, I believe that, if lack of encapsulation is the only indication for the measure, an unnecessary element of risk will often be added to an already desperate situation. In arriving at a decision it is to be borne in mind that many times all is not pus that appears purulent, and that the leucocytes and peritoneal absorbents are able to take care of much material that may seem suspicious. There is certainly no indication for lavage in walled-off abscess cases, and I have come to believe that a safe rule of procedure in the so-called general peritonitis case is, when in doubt omit it.

The question of topical applications applies only to the localized abscess cases. Ordinarily in the management of this condition the indications are supposed to be satisfactorily met by mopping out the pus and instituting drainage. Each of the various antiseptic solutions is favored by different surgeons for moistening the sponges used for mopping, while others prefer to use them dry or merely squeezed out of hot saline solution.

The topical application to which I wish especially to invite your attention in this connection is tincture of iodine. This method was originated by Drs. J. A. Crisler and Eugene J. Johnson of Memphis, Tenn., and has been presented by them in numerous published articles and before various medical societies during the past ten years. These are busy surgeons of wide experience and both are men of unquestioned veracity as well as ability. They employ the treatment in all pus cases, whether encountered as walled-off abscesses or diffuse, septic peritonitis, their experience aggregating more than twelve hundred (1,200) cases up to December 1st, 1915. The strength of the solution used is 2½ per cent of iodine (crystals) in 95 per cent alcohol, and as soon as the incision is

made and pus disclosed the solution is poured in before any attempt is made to deal with the pathology. The amount of the solution used in a given case depends upon the extent of the infection. If partially or completely localized, a few ounces will suffice; if the infection is widespread, the incision is retracted and elevated and the entire abdominal and pelvic cavities flooded with the solution, from 8 to 32 ounces or more being used. The excess of the solution is mopped out, and drainage is invariably employed, as well as the Murphy drip and Fowler position. They report as the result of this method the uniform saving of all but moribund cases, more rapid and comfortable convalescence, and a lessened tendency to the formation of symptom-producing adhesions.*

This revolutionary innovation has been received with skepticism and outspoken opposition. In fact, few have had the courage to try it in the condition for which it was recommended, preferring to accept the results of laboratory experiments as the basis of their antagonism. This is quite obviously unfair, since the normal peritoneum of the laboratory cannot be expected to exhibit the same toleration and reaction as the infected peritoneum of the surgical clinic. When all has been said, theory and laboratory finding must stand or fall by the test of clinical experience.

I would not be understood as advocating the use of the tincture of iodine in the indiscriminate way suggested by Drs. Crisler and Johnson; but I would and do endorse it as a valuable topical application in localized abscesses. In such cases I have not hesitated to employ it freely, and I must say with the utmost satisfaction. Gradually extending its field of application as my confidence increased, I have come to believe that the method is one of great value and that the claims of its originators will ultimately, perhaps, be fully verified. This conclusion is strengthened by the recent investigation of antiseptics made by Lambert, who states that iodine stands out as the one chemical of the

many tested to which the tissue cells were more resistant than bacteria.*

The fundamental idea in connection with posture is the promotion of drainage by invoking the aid of gravity. True, various postures are favored by different surgeons in cases where drainage is not employed, but it would probably be difficult in many instances for them to give satisfactory reasons for their preferences. Much controversy has occurred as to whether or not gravity is a factor of any practical importance, even in drainage cases. Accumulated experience, as well as laboratory experiments, seem to leave little doubt that posture does facilitate drainage, for the brief time, at least, during which it is possible to maintain drainage of the general cavity. In the case of the encapsulated abscess there can be no question that discharge of the pus may be materially favored by the position of the patient.

The posture to be employed is wholly dependent upon the case in hand. The Fowler position will most often meet the indications, though it is quite obvious that in certain instances the lateral, prone, or semiprone position, with or without elevation of one end of the bed, will be preferable.

It is impossible to do more than touch upon the question of drainage. The dictum of Lawson Tait, "When in doubt, drain," is still widely accepted as the essence of practical wisdom on the subject. It may be remarked, however, that doubt diminishes as experience increases. As clinical judgment matures the indications come to be interpreted as they present, without hesitation or mental debate. My own feeling is that the tendency very often has been to employ drainage unnecessarily, thus introducing a positive element of risk and appreciably increasing the patient's discomfort as well as his stay in the hospital. And yet it must be conceded that it is far better to drain a dozen cases unnecessarily than to omit it in one case where it is necessary.

As a rule, it is preferable to establish drainage through a second incision placed at the point of election rather than through the

*J. A. Crisler, M.D., in *Transactions, Southern Surg. & Gyn. Assn.*, 1915.

**Editorial Journal A. M. A.*, Jan. 6, 1917.

operation incision. By this means danger of infection of the larger wound is avoided and the aid of posture and gravity more readily secured. Two or more such drainage incisions may sometimes be found advantageous.

The use of gauze for drainage purpose is to be unreservedly condemned. It has been conclusively demonstrated that it does not drain pus. Because of its irritant properties it provokes a free outpouring of serum, which may be misleading, and for the same reason quickly invites encapsulation becoming merely a moist, germ-breeding plug in a walled-off sinus. Happily, its use is now virtually abandoned.

The glass drainage tube has certain advantages, but its many inherent disadvantages so far outweigh them that it soon fell into disfavor. The soft rubber drainage tube, with or without a strand of gauze in its interior, at the present time is the most popular means of drainage and serves the purpose quite well. I am partial to the drain made of thin, folded rubber sheeting, which seems to possess a number of advantages. Being smooth and compressible, it produces a minimum of irritation and can be quickly adapted in size and shape to meet any requirements. I have been using this material exclusively for a number of months and have concluded that it uniformly affords longer as well as better drainage.

Roughly speaking, a drain of any kind after 36 or 48 hours becomes simply a foreign body, much more likely to do harm than good. When the object is to drain the general peritoneal cavity the time limit in which this is possible is considerably shorter. For this purpose multiple drains through separate openings for a few hours (12 to 24) probably best accomplish all that can be hoped for.

Peritoneal Adhesions.

The prevention of post-operative adhesions has been the dream of the abdominal surgeon for a generation. A great variety of substances have been suggested and utilized, only to be discarded one by one as their usefulness or harmfulness became apparent. The predominant idea in the past has been that of mechanical protection as evidenced by the character of the substances employed, petro-

latum, butter, egg-albumen, camphorated oil, vitreous humor, etc.

Dr. Saxton Pope of San Francisco approaches the problem from a different viewpoint. He believes that fibrous exudates in the peritoneal cavity conform to the same principles as those which control the clotting of blood, i.e., before a fibrous exudate can form, with its resultant plastic agglutination, there must be the liberation of the ferment, thrombokinase, its activation of prothrombin in the presence of calcium, and the production of thrombin, which converts soluble fibrinogen into fibrin. If, then, peritoneal adhesions are to be prevented, it must be by some method which inhibits the process of ferment activity and the resulting fibrin deposits. It is a physiologic law that thrombokinase is active only in the presence of a calcium salt, and this salt, which exists normally in the serum, may be bound or neutralized by citrates.*

The practical application of this idea consists in the addition of two per cent citrate of soda to the ordinary operating room solutions of normal salt for the moistening of gauze sponges and pads, for rinsing the hands, etc. Clinically the method is claimed to yield results entirely in accord with those of the laboratory. It has now been used in many hundreds of cases by Drs. Terry and Pope, who regard it as possessing many advantages. Two advantages worth emphasizing are that it is harmless and that it is inexpensive.

However great the possibilities of preventing peritoneal adhesions by the citrate or similar chemico-physiologic methods, we should not forget the more ordinary aids looking to this end, the value of which is well established, e.g., no longer incision than actually required, scrupulous gentleness in the handling of all tissues, the greatest celerity compatible with efficient work. The Murphy drip, begun without a moment's delay, should be employed in all these cases. When the danger from septic absorption is urgent absolute rest should be secured and main-

*Annals of Surgery, Jan., 1914, and Feb., 1916.

tained with full doses of opium as advocated by Alonzo Clark a half century ago.

Even though under certain conditions peritoneal adhesions may be regarded as conservative for a time, it cannot be doubted that ultimately they are very likely to become a positive menace both to health and life. Remembering that they are probably insoluble after 72 hours and that their formation and disappearance are largely influenced by the motility of the viscera, it is advisable as soon as the acute stage is past to stimulate peristalsis, with the two-fold idea of promoting visceral movement and eliminating toxic material. I am convinced that, except in extreme cases, nothing is gained by delaying evacuation of the bowels longer than 48 hours. On the contrary, I am quite sure that much discomfort, if not real harm, may be prevented in the average case by early elimination.

Suite 1019, Hollingsworth Bldg.

PREPARATIONS OF THE PITUITARY GLAND.

The last edition of the Pharmacopeia, recognizing that the best attested field of usefulness for pituitary extracts is in obstetrics, adopted the test of their activity on the uterus of the guinea-pig according to the Method of G. B. Roth, of the U. S. Hygienic Laboratory. Roth now reports on the activity of seven commercial samples, the products of five American firms. Four of the samples were found of Pharmacopeia strength; the other three were much weaker. Those preparations which have been accepted by the Council on Pharmacy and Chemistry for New and Non-official Remedies corresponded to the pharmacopeial requirements. Roth's work shows that the blood pressure method for determining the activity of pituitary preparations is not a satisfactory method for determining the activity of a preparation on the uterus. (*Jour. A. M. A.*, May 5 1917, p. 1325).

DIARSENOL.

A proprietary brand of arsenphenolamine hydrochloride, chemically identical with salvarsan. For a discussion of the action, uses, chemical and physical properties see New and

Non-official Remedies, 1917, under salvarsan. Diarsenol is marketed in hermetically sealed ampules containing, respectively, 0.1 Gm., 0.2 Gm., 0.3 Gm., 0.4 Gm., 0.5 Gm., 0.6 Gm., 1.0 Gm., 2.0 Gm. and 3.0 Gm. diarsenol. The Council accepted diarsenol for New and Non-official Remedies as the available supply of salvarsan appeared to be insufficient to supply the demand, and this preparation conforms to the rules of the Council for acceptance of proprietary preparations. Diarsenol is made in Canada by the Synthetic Drug Company under a license issued by the Commissioner of Patents of Canada. The Farbwerke-Hoechst Company, however, announces that the sale of brands of arsenphenol-amine hydrochloride other than that sold as salvarsan is, in its opinion, an infringement of its rights. The company states that all violations of these rights will be prosecuted under the law. (*Jour. A. M. A.*, May 12, 1917, p. 1407).

The war in Europe has wrought great havoc; it has destroyed millions of lives, has maimed and crippled many men, has littered the fields with shells of destruction, dismantled cities, and crumbled into dust some of the most stately edifices, both secular and religious, ever conceived in the brain of man or reared by his hands. Civilization is not to be lost, and the upward progress of the race is not to be permanently arrested. The potent saving factor in this great catastrophe is scientific medicine. Had disease followed these great armies in like proportion as it accompanied smaller armies in the past, the better part of civilization might have been lost. But in all the belligerent countries medical science has stayed the pestilence and coped successfully with typhoid, typhus, plague, cholera and other infectious which in the past often wrought greater havoc than war and determined the fate of nations. The obligation has come to us. Let us lay aside our individual interests, forget our personal desires and professional ambitions, and with one accord proceed in the execution of the duty that lies before us.—*Journal American Medical Association*, June 2, 1917.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn.

JULY, 1917

EDITORIALS**FROM THE STATE COMMITTEE ON
NATIONAL DEFENSE.**

The Tennessee State Committee on Medical Preparedness, acting under the Council of National Defense, met in Nashville on June 28th to discuss the need for doctors in the Army and Navy and the plans of the Government in relation to this need. As a result of the information put before it, the Committee issues this

Appeal to the Doctors of Tennessee.

Your country needs the services of 20,000 physicians. So far, 9,000 have volunteered. Tennessee's proportion is about 400, of whom about 150 have offered themselves. Unless the deficit is supplied by volunteers, the Council on National Defense will, on August 1st, recommend a law conscripting physicians for Government service. We call ourselves the "Volunteer State". In the name of all the traditions that we honor and would preserve, let us offer ourselves for this work, and not be drawn into it by legal processes. This is no time to consider rank or emoluments, or individual desires or preferences. Our country needs you—needs every one of you—physicians, surgeons, specialists in whatever departments, laboratory men, X-ray men, young and middle-aged. You have lived under the protection that your country offers you, you have enjoyed the benefits of her great opportunities, you have been sheltered by her laws and developed by her institutions, and now that all these things are endangered, it is your privilege and duty, as it should be your pleasure, to render to her what service you can.

The enrollment of our full quota of volunteers will exempt us from the provisions of the draft law, and you can do nothing greater for your State than to help her place her name at

the head of the list of those who gave willingly of their talents. You owe it to your profession, for irregular practitioners of all sorts are making capital of the fact that the doctors are responding slowly. You owe it to yourself and your family, for how else can you give a creditable answer to the question, "What did you do for your country in her hour of need?"

Members of our profession have never, since the world began, failed to respond to the calls made upon them, no matter what inconveniences and hardships were incidental to the response. You are now called on for a service which no one but you can render. Our allies have fought our fight for three long years, and now that it is our turn to shoulder the burden, let us do it willingly, cheerfully and quickly. And if the flower of our young men are to go out to do their part and take the grave risks which they will take, it seems but little to ask that we go too, to protect them from those dangers with which our special training enables us to contend. If it is a sacrifice and a hardship for you to go, then thank God that you are privileged to make a sacrifice and undergo hardships for the honor of your profession, your State, your country and for mankind.

W. D. HAGGARD, Chairman.

E. T. NEWELL,

C. N. COWDEN,

E. C. ELLETT,

LUCIUS E. BURCH,

R. E. FORT,

BATTLE MALONE,

S. R. MILLER,

G. M. ELLIS,

A. B. DeLOACH,

MOORE MOORE,

FRANK JONES,

FRANK D. SMYTHE,

H. H. SHOULDERS,

OLIN WEST,

Committee.

YOUR CORRECT ADDRESS, PLEASE!

It has been found out that several of our County Secretaries have given postoffices which have been abolished as addresses of some of our members. Then, too, sometimes it happens that no addresses are given. Again it happens that wrong addresses are given.

The mailing list of the Journal is kept as nearly correct as the information in hand makes possible. If your Journal does not reach you promptly, if the address on it is incorrect, please be kind enough to send in your correct address. Please!

THE EXEMPTION BOARD.

A board composed of three representative men, one of them a physician, has been created in each county in the state, whose duty it will be to pass upon the fitness or lack of fitness for military service of all who were registered under the law providing for the drafting of men between the ages of 21 and 31. The duties confronting these boards are going to call for rigid honesty, hard work, and good, hard common sense upon the part of the members. The medical men on them will have to work a little harder, be a little more honest, and use a little more common sense than the other members. He is going to have to withstand sentimental appeals, and arguments of all kinds—some good and others bad—he is going to be compelled to put his personal wishes and his personal friendships and his personal interests into the background, along with his personal enmities, and he is even going to be called upon to refuse bribes which will be offered under many guises. Upon the doctor on the exemption board will rest in a peculiar way the responsibility of selecting the men who are to do Tennessee's part in our nation's part in winning the war.

The doctor who has been appointed to serve as a member of the board of his county who has any doubt of his entire ability to judge of the physical fitness, to detect the least defect which will render an enlisted man unfit, should resign. The doctor on an exemption board who has any considerable doubt of being able to ignore sentimental appeals, and who cannot forget, so far as the purposes of the draft of soldiers is concerned, his own personal friendships, should resign at once. The doctor on an exemption board who can not absolutely discard his personal enmities should resign. The doctor on an exemption board who will not refuse bribes of any sort should be hung.

If any men in all the world were ever entitled to a square deal, in all that the term implies, the men who walked quietly to the places of registration last month and put their names on the cards at the call of this nation are entitled to it. The only doctor on an exemption board that can give them that is one who is capable from a professional standpoint, who is honest for honesty's sake, and who has an abundance of common sense discrimination.

We are glad indeed to note, from such lists as we have seen, that splendid selections have been made from the medical faculties of many of our counties. We are sorry to note that some of the physicians selected are men who have sought and urged their own appointment—a thing which, in our judgment, they should not have done. We have faith, however, that in most of the counties of Tennessee, if not in every one, the honor of medicine will be upheld and her ideals truly represented by the doctors who serve on our exemption boards.

MUST WE BE DRAFTED?

The Journal is informed that 20,000 physicians must be had for service by the Government of the United States in this great world war. At the time this is written—on July 2—our information is to the effect that less than 9,000 have been enlisted. There are yet 11,000 to be secured in some way, and there are just two ways through which they can be had—voluntary offering and draft. If the needed number is not forthcoming of their own motion, the draft, according to information which the Journal considers to be trustworthy, will most certainly be applied, and that soon.

It is to be presumed that each state will have an allotment, based upon population or, perhaps, on its medical population. On the first mentioned basis, Tennessee's quota will be approximately 400. At the present writing, according to the facts in our possession, less than half the number have volunteered. It would be a fine, fine thing if enough more men would come in at once to save Tennessee from the draft.

CHEAPER VACCINES AND ANTITOXIN.

Dr. R. Q. Lillard, Secretary of the Tennessee State Board of Health, completed an arrangement, some time ago, with E. R. Squibb and Sons through which the physicians of the state will be able to secure anti-typhoid vaccine, smallpox vaccine, and diphtheria antitoxin at prices far below those at which these products have been hitherto obtainable. Under this agreement between the State Board of Health and Squibb and Sons, a "standard house," an enormous saving to physicians and to the public is made possible, and the Journal commends Dr. Lillard, Secretary of the Board, for his action in this matter, which we know will be greatly appreciated by the profession.

Squibb and Sons have agreed to arrange for a depository in every place in the state having a population of 500 or more, where a fresh supply of antitoxin and vaccines will be kept. Smallpox vaccine points or tubes will be sold from these depositories at eight cents each, a saving of about fifty per cent. Typhoid vaccine, 3 ampules for 28 cents; 3 syringes for 80 cents; 30 ampules for two dollars; 20 c.e. vial for one dollar.

Diphtheria antitoxin, 1,000 units for 48 cents—instead of for two dollars; 3,000 units for \$1.32; 5,000 units for \$1.88; 10,000 units for \$3.60—instead of for \$12.00.

These most favorable prices leave little room for excuses for not applying preventive measures for the control of smallpox and typhoid and for not using curative doses of antitoxin in diphtheria.

EXAMINED FOR M. R. C.

The following list contains the names, so far as the Journal has been able to get them, of Tennessee physicians who have applied for commissions in the Medical Reserve Corps and have been examined by Major Lucius E. Burch, Nashville, and Major Frank D. Smythe, Memphis. Those from West Tennessee, examined by Major Smythe, have passed examinations satisfactorily, while a few of those whose names are given who were examined by Major Burch were rejected for physical disabilities. If there are

other names which should be included in this list the Journal will be glad to print them next month.

Dr. Gilbert M. Roberts, 1126 James Bldg., Chattanooga.

Dr. Emmett M. Harrison, 928 James Bldg., Chattanooga.

Dr. Chester A. Skelton, Market and Main Sts., Chattanooga.

Dr. Russell F. Wilson, 707 Walnut St., Chattanooga.

Dr. Allen P. Warrenfells, dentist, Soddy.

Dr. Edwin Lloyd Jenkins, Soddy.

Dr. Wm. Hillas, 514 Mabel St., Chattanooga.

Dr. Sam'l H. Long, 5½ E. 8th St., Chattanooga.

Dr. D. K. Summers, 201 VanDeman Bldg., Chattanooga.

Dr. G. E. Horton, Wartrace.

Dr. C. A. G. Sundstorm, 708 Union Ave., Chattanooga.

Dr. A. W. Hillard, 826½ Market St., Chattanooga.

Dr. Bonner Marcus Clayton, Crossville.

Dr. Vaulx Gibbs, James Bldg., Chattanooga.

Dr. Leopold Shumacker, 10 W. 8th St., Chattanooga.

Dr. Ray M. Means, Chattanooga.

Dr. Stanton H. Barnett, Municipal Bldg., Chattanooga.

Dr. C. A. Costello, South Pittsburg.

Dr. A. T. Ingalis, 529 McCallie Ave., Chattanooga.

Dr. E. R. Hostetter, Jr., Chattanooga.

Dr. J. E. Lacey, Jasper.

Dr. J. D. McPheeters, James Bldg., Chattanooga.

Dr. J. B. Steele, James Bldg., Chattanooga.

Dr. Stewart Lawwill, Chattanooga.

Dr. W. W. Dickey, Chattanooga.

Dr. J. H. Barnett, 13½ E. 8th St., Chattanooga.

Dr. E. Gecovis Maxwell, Darden.

Dr. John Taylor Barbee, Jackson.

Dr. Wm. Paul McDavid, Mason.

Dr. Robt. Bailey Griffin, Ridgely.

Dr. Guy Collins Anderson, Eads.

Dr. Green Warren McConathy, Eads.

Dr. William Herman Ballard, Western Hospital for Insane, Bolivar, Tenn.

Dr. Thomas Whitson Rhodes, Whiteville.

Dr. Clarence Angelo Bell, 198 S. Main St., Memphis.

Dr. John Grundy Seay, Germantown.

Dr. George Randle McSwain, Paris.

Dr. Chas. Hendly, Cottage Grove.

Dr. Lawrence Larry Keller, Memphis.

Dr. Charles Decatur Blassingame, Memphis.

Dr. David Galloway, Memphis.

Dr. William Claude Sain, Bolivar.

Dr. M. G. Spingarn, Memphis.
 Dr. Benjamin Luckett Schoolfield, Memphis.
 Dr. John S. Miller, Collierville.
 Dr. Ellis Leroy Wilkins, Dyersburg.
 Dr. Louis Francis Verdel, Covington.
 Dr. Edward Clay Mitchell, Memphis.
 Dr. Pearl Stephens, Memphis.
 Dr. David Tarwater Austin, Bogota.
 Dr. William Austin Brewer, Memphis.
 Dr. Arthur Ferdinand Cooper, Memphis.
 Dr. Kinsey Mansfield Buck, Memphis.
 Dr. George Lew Brown, Memphis.
 Dr. Edward Gilmer Thompson, Memphis.
 Dr. John Lucius McGehee, Memphis.
 Dr. W. G. Somerville, Memphis.
 Dr. J. B. Stephens, Memphis.
 Dr. J. J. Hobson, Memphis.
 Dr. E. S. Watkins, Memphis.
 Dr. J. W. Caldwell, Nashville.
 Dr. J. H. St. John, Nashville.
 Dr. Thos. V. Woodring, Nashville.
 Dr. C. B. Crittenden, Madison.
 Dr. D. T. Gould, Lawrenceburg.
 Dr. C. C. Hardison, Iron City.
 Dr. Wm. K. Edwards, Centreville.
 Dr. R. W. Billington, Nashville.
 Dr. J. C. Fly, Lyles.
 Dr. J. R. Shelton, Oliver Springs.
 Dr. J. E. Lacey, Jasper.
 Dr. S. S. Moody, Shelbyville.
 Dr. H. L. Douglas, Nashville.
 Dr. T. B. Givan, Nashville.
 Dr. Wm. B. Goddard, Nashville.
 Dr. Fleetwood Gruver, Nashville.
 Dr. James Brew, Jr., Nashville.
 Dr. Eugene Mr. Orr, Nashville.
 Dr. Richard A. Barr, Nashville.
 Dr. Holland M. Tigert, Nashville.
 Dr. Albert W. Harris, Nashville.
 Dr. W. C. Dixon, Nashville.
 Dr. Wm. M. McCabe, Nashville.
 Dr. Jno. Owsley Manier, Nashville.
 Dr. Thos. Dempsey McKinney, Nashville.
 Dr. Wm. Gilliam Kennon, Nashville.
 Dr. Ernest M. Fuqua, Nashville.
 Dr. Robert R. Brown, Nashville.
 Dr. B. M. Little, Dresden.
 Dr. R. L. Dorsett, Tullahoma.
 Dr. L. E. Dyer, Midway.
 Dr. F. W. Lee, Springfield.
 Dr. Granville Walker, Savannah.
 Dr. David A. Gregory, Ardmore.
 Dr. Wm. Harley Longmire, Knoxville.
 Dr. Jno. Hartwell Marable, Cowan.
 Dr. Eustace C. Mason, Bon Air.
 Dr. Thos. M. Harper, Medina.
 Dr. Edwin E. Miller, Nashville.
 Dr. Jesse A. Moore, Sharon.
 Dr. Wm. A. Shelton, Oliver Spring.
 Dr. S. B. Duggan, Eagleville.
 Dr. Jno. M. Lee, Nashville.

Dr. C. M. Banks, Springfield.
 Dr. J. M. Oliver, Portland.
 Dr. R. M. Means, Chattanooga.
 Dr. T. A. Mitchell, Nashville.
 Dr. F. B. Dunklin, Nashville.
 Dr. Roy A. Douglass, Nashville.
 Dr. H. E. Hall, St. Joseph.
 Dr. W. L. McCaleb, Hillsboro.
 Dr. D. B. Cliffe, Franklin.
 Dr. J. L. Butterworth, Nashville.
 Dr. Wm. E. Boyce, Flatwoods.
 Dr. T. J. Ford, Silver Point.
 Dr. P. H. Faucett, Columbia.
 Dr. J. H. Lassiter, Nashville.
 Dr. Chas. D. Walton, Gordonsburg.
 Dr. Wm. D. Cagle, Lobelville.
 Dr. P. D. Biddle, Columbia.
 Dr. C. C. Odom, Nashville.
 Dr. E. B. Ross, Clarksville.
 Dr. J. E. Powers, Regan.
 Dr. G. E. Wilson, Rockwood.
 Dr. R. E. Sullivan, Nashville.
 Dr. W. D. Haggard, Nashville.

Unit From University of Tennessee School of Medicine, Memphis.

Dr. Battle Malone, Dr. E. C. Ellett, Dr. J. L. McGehee, Dr. A. F. Carter, Dr. S. E. Frierson, Dr. S. N. Brinson, Dr. E. L. Anderson, Dr. E. S. Thompson, Dr. T. N. Coppedge, Dr. J. J. Hobson.

The Negro physicians examined at Nashville:

Dr. Jno. D. Carr, Knoxville.
 Dr. G. W. Bugg, Nashville.
 Dr. J. L. Leach, Nashville.
 Dr. F. H. Martin, Nashville.
 Dr. J. W. Russell, Nashville.
 Dr. J. T. Phillips, Nashville.

MEDICAL DEFENSE FOR MEMBERS.

Slightly more than six hundred of our sixteen hundred members last year paid the one dollar assessment for medical defense. A letter to the Journal from Dr. S. R. Miller, Chairman of the Committee on Medical Defense, announces the fact that this feature of the work of the State Association is becoming more popular, as is shown in the fact that eight hundred and twenty-nine members have paid the assessment for the year 1917. Another interesting statement in Dr. Miller's letter is to the effect that another malpractice suit has been won by one of our members defended through the Committee on Medical Defense. On June 23, when this is being written, there are fourteen hundred and eighty-four names on the membership roll of the Association.

Every man of these should at once send in his dollar for medical defense, if the matter has not already been attended to. For the purpose of keeping the records right, the assessment should be paid to the County Secretary and by him transmitted to Dr. Miller. Let's make this thing go big.

DEATHS.

DR. T. E. SAWYER, of Martin, a member of the Weakley County Medical Association and of the Tennessee State Medical Association, died suddenly while on the train returning to his home from Greenfield. Dr. Sawyer was Secretary of his County Society at the time of his death.

DR. C. E. LONES, of Knoxville, a member of the Knox County Medical Society and of the Tennessee State Medical Association, died at the Knoxville General Hospital on June 19 from injuries received in an automobile accident near Maryville.

DR. SAM B. BOYD, of Knoxville, died at his home on June 14. Dr. Boyd retired from practice about five years ago and at the time of his death was not affiliated with the medical organizations of the State.

DR. E. C. FREEMAN, of Pulaski, died suddenly at his home on June 9 as the result of cerebral hemorrhage. At the time of his death and for a number of years prior thereto Dr. Freeman was the Treasurer of the Giles County Medical Society and was a valued member of the Tennessee State Medical Association.

DR. JAMES PARTRIDGE, 46, died at Alton Park on June 25, 1917, after an illness of more than a year.

DR. FRANK B. REAGOR, one of the most lovable men in the medical profession of Middle Tennessee, Secretary of the Bedford County Medical Society, Councilor for the 5th district in the Tennessee Medical Association, and one of the best workers organized medicine this State has ever had, died suddenly at the home of his brother, in Shelbyville, on the morning of June 29, 1917.

"PREPARING FOR MEDICAL-MILITARY SERVICE."

The following article taken from the department of Surgical Sociology in the Ameri-

can Journal of Surgery, and written by Dr. Ira S. Wile, is timely and impressive. It should be read by every doctor who may be called to the colors, but especially do we commend its reading to the fellows who "do not want to waste time in a training camp." It must be remembered that an Army doctor is a very different kind of doctor from the doctor in private practice. He must be a soldier as well as a doctor and he cannot be a good Army doctor until he knows much about military affairs.

"In the development of medical officers for the United States military and naval services it is exceedingly important that promptness in training be secured. A large number of ambulance units have been constituted from men thoroughly willing to serve, but lacking in the essential technical knowledge fitting them for the particular duties connected with military organization. It is probably impossible to prevent the first units who are sent abroad from going unprepared, save in the medical and surgical technic acquired through civil practice. It would appear to be an act of wisdom for ambulance units to become thoroughly organized and to undergo a course of training, fitting them for any type of service to which they may be assigned, either in this country or on foreign soil. Every physician contemplating enlistment in the war should be undergoing a period of training in order to familiarize himself with the numerous problems which are certain to present themselves.

"Various medical colleges are now instituting courses of lectures under military auspices to facilitate the didactic instruction of candidates for the medical corps. A general course involves the duties falling upon the medical department during peace or war, including sanitation, supplies, records, examination of recruits, hospital organization, rationing, hygiene on the march, in the camp, and in the field, military weapons and their effects, and the characteristics of wounds from various sources. The numerous diseases, not peculiar to but common among soldiers, are discussed as well as methods of the evacuation of the wounded, the treatment of wounds, and the general tactical information

required by medical officers in protecting the health and welfare of troops.

A large number of physicians will undoubtedly find themselves unable to attend upon organized courses of lectures, but, nonetheless, feel the need of self-improvement and development along these lines. In connection with this problem much benefit may be secured through familiarity with the various regulations of the medical department. It may be possible to have access to these manuals, books of rules and tables of organization at army headquarters. It appears to be difficult to secure copies for personal use as the supply is apparently limited. Application must be made to the Government Printing Office, Washington, D. C., and copies will be forthcoming if they are available.

“Among books which are purchasable and which are of particular value there may be recommended the following:

Military Hygiene, by Col. E. L. Munson.

Military Hygiene, by Col. Valery Havard.

Military Hygiene, by Maj. P. M. Ashburn.

Military Hygiene, by Col. A. E. Woodhull.

Field Service, by Capt. J. A. Moss.

Medical Service in Campaign, by Col. Paul F. Straub.

A Study in Troop Leading and Management of Sanitary Service in War, by Morrison and Munson.

Handbook for Sanitary Troops, by Col. C. E. Mason.

Gun Shot Injuries, by Col. Louis A. Lagarde.

Surgical Experience in South Africa, by G. H. Makins.

Medical Military Aspects of the European War, by Fauntleroy.

Military Surgery, by Dunlap Penhallow.

“The above-named works are merely designed to suggest a starting point for those aiming to prepare themselves for the service they desire to undertake.

“With the exception of work in base hospitals the amount of surgical service performed is comparatively negligible for higher officers compared with the importance of administrative work and effective sanitation and the securing of a high degree of personal hygiene on the part of troops.

“During the period of time that must pass

before the mobilization of the army by selective draft, the medical forces should be put through a rigorous course of training with a view to developing their efficiency as a unit and developing the potentialities of the personnel. There can be no excuse for failure to develop this important branch of military service and the need for it is apparent to all familiar with the medical aspects of modern warfare. The large number of majors and captains recently commissioned who lack adequate knowledge of their duties is bound to result in unsatisfactory service unless special effort is made to acquaint such officers with the details of their future duties. The fact that a man stands high in the medical or surgical profession and largely on this basis attains high rank does not suffice to prove that he will become an equally great leader in military service. Reputation and name under civil conditions will not serve as a satisfactory substitute for the carefully trained man whose youth and enthusiasm, medical training and hospital experience is supplemented by thorough instruction along military lines. As Lieutenant Colonel Henry Page, of the Medical Corps of the Army, put it, in the *Military Surgeon*, April, 1917:

“I grant you that surgeons intended only for ward work in base hospitals require far less training than do men required for field service, but this does not alter the fact that a man without military training is a misfit in the military establishment, no matter what duty he attempts. This is true of teamsters, depot clerks, pay clerks, and chaplains, but it is far more true in the case of surgeons who must be made available for so many of the duties of a soldier. So much for the apathy of the medical profession that is born of a lack of appreciation of the necessity for preparedness.”

“Assuming for the time being that the struggle in which this country is now engaged is to be of long duration, every ounce of effort should be put forth to prepare the medical organization for competent service. The time to begin is now. The call to arms has been issued. The medical profession has a responsibility for self-preparation which it should be the first to recognize.

“Are you preparing yourself for service?”

Are you competent? Are you informed?
Are you ready?"

IF YOU GO.

You will be a Major, a Captain or a Lieutenant—mostly the last. You will be paid \$3,000, \$2,400, or \$2,000, according to rank.

You will be promoted if you deserve to be.

You will serve wherever called upon to serve.

You may be asked to examine recruits and you can give a most important service here.

You may be, and probably will be, sent to a training camp.

You will receive pay from the time you report for duty.

You will not be asked, we take it, to do what you cannot do.

You will be expected to do well what you can do.

You will be examined, physically and for what you know, before being accepted.

You will receive a commission if accepted.

You will formally accept your commission before you are enrolled.

You will serve abroad if you are ordered to do so.

You will be accepted without any conditions of any sort.

You will provide your own equipment, according to instructions.

You will pay your own expenses to the place of examination.

You may serve as a Regimental Surgeon, going with your regiment everywhere and to the firing line.

You may serve as an Ambulance Company Surgeon, establish dressing stations, do emergency surgery and transport patients to the field hospitals.

You may serve in a field hospital, an emergency hospital receiving the wounded from the front.

You may, if you have had the very best training, serve in a base hospital, which is a permanent institution.

You must learn how to be a soldier as well as a doctor.

You will get experience of a wonderful sort.

You will render service which none but the members of your profession can give.

FROM THE AMERICAN RED CROSS.

The following letter to the Secretary from Maj. C. H. Connor, in charge, First Aid Division, The American Red Cross, is printed here for the information of our members and with the hope that our County Societies will do everything within reach to furnish active co-operation in the splendid work of the Red Cross. Many of these Societies already have Red Cross Committees. All others should have.

June 30th, 1917.

Dr. Olin West,

Secretary, State Committee on Red Cross
Medical Service,
Nashville, Tenn.

There are approximately 5,000 Red Cross First Aid classes now under instruction in the United States. As this number is rapidly increasing, it is desired that the State and County Medical Societies, through their Red Cross Committees, co-operate with the First Aid Division of the American Red Cross, in approving the appointment of physicians of recognized professional ability and standing, as instructors and examiners for First Aid work. I might add that inasmuch as physicians acting in these capacities are receiving from some of these classes a fee for their service, it is desired that such instructors and examiners should be men of repute in their community, and qualified to act in the capacity of First Aid instructor or examiner.

Therefore, it is earnestly requested that the Local Red Cross Committees in your state be invited to co-operate with such Chapters, not only in forming new First Aid classes, but also in having representative physicians from the State and County Societies assist the local Chapters in the capacity of a Red Cross First Aid Committee. This Committee upon application of the County Society and the County Red Cross Chapter to the First Aid Division of the Red Cross will be given the power to pass upon the credentials of instructors and examiners of First Aid classes. This office has already appointed, upon the request of certain Red Cross chapters, about one hundred Committees on First Aid Instruction in the United States, granting them the power of appointing all First Aid in-

structors and examiners for classes formed within the jurisdiction of the chapter they represent. In such cases we would appreciate it, if the County Societies would interest themselves in the committees and their work; and aid them in obtaining suitable physicians to act as instructors and examiners, also to assist in other First Aid activities of the Chapter.

In view of the above fact, it will be appreciated if you, as Secretary of your State Committee on Red Cross Medical Service, will inform the Red Cross Committee of your County Societies to take this work up with the Red Cross Chapter as soon as possible.

Thanking you for your personal co-operation, and that of your State Committee, in our endeavor to further this great educational movement, I am,

Faternally yours,

C. H. CONNOR,

Major, Medical Corps, U. S. Army, In
Charge, First Aid Division.

For the Director-General,
Dept. Military Relief.

MEDICAL RESERVE CORPS.

To the Presidents and Secretaries of the Constituent State Associations and Component Medical Societies of the American Medical Association:

The Medical Department of the Army is circularizing the medical profession with a view to presenting to each physician who is within the age limit, 55 years, an opportunity of offering his services as a member of the Medical Reserve Corps. We believe that the time is opportune for each county society to respond to its responsibility and privilege in connection with the mobilization of the medical profession for war. We, therefore, suggest, if your society has not already taken action on the matter, that you call a meeting to consider questions immediately connected with this mobilization.

The county society should determine the number of physicians within its jurisdiction who are under 55 years of age and who of these are physically and professionally qualified for the service; also how many and who

could be spared from their respective localities. Another important matter which should be considered and acted on by each county society is how the personal interests of the physicians who volunteer may be safeguarded by the society.

We enclose reprints from The Journal of the American Medical Association bearing on different phases of the question. We urge you to appreciate the necessity of action in this matter. It is requested that after the meeting you will send a full report to the secretary of your state association, as well as to the secretary of the American Medical Association, 535 N. Dearborn St., Chicago. If your society has already taken action, it will be appreciated if this fact is reported to both these offices. Very truly yours,

RUPERT BLUE, President.

ALEX. R. CRAIG, Secretary.

SOCIETY MEETINGS IN JUNE.

We have received no reports of meetings held in any of our counties during the month of June, but from newspaper clippings which we have secured have noted the following: Blount County Medical Society, at Maryville, June 6th; McNairy County Medical Society, Hardin County Medical Society, and the Alcorn (Miss.) County Medical Society, at Shiloh National Park, June 12th; Henderson County Medical Society, Hinson Springs, June 19.

A card announcing the regular monthly meeting of the Rutherford County Medical Society was received before the meeting, as was a copy of the program of the meeting of the Henderson County Medical Society and one of the meeting of the McNairy and Hardin County Societies with the Alcorn County Society at Shiloh.

The Journal would like to have reports of the regular meetings for publication.

MEMBERS REPORTED FOR JUNE.

J. N. McConnell, Maryville; J. N. Kent, Enville; J. J. Lentz, S. F. Ross, W. A. Horan, F. B. Dunklin, L. E. Trent, and H. S. Friedman, Nashville; D. E. Hill and D. T. Wall, Parsons; G. S. Waters, Stella; W. S. Mimms,

Bunker; J. L. Seay, Whitwell; R. M. Richardson, Chattanooga; D. C. Shelton, Inman; J. C. Brooks, J. McC. Hogshead, D. C. Morris and E. B. Anderson, Chattanooga; E. H. Byrd, East Chattanooga; Harry Jones, Hickory Valley; Thos. Crowder, Chapman; C. W. Rain, H. E. Ford, A. W. Carr, and T. P. Miller, Knoxville; J. J. Cullinan, Bearden; J. J. Abernathy, R. F. D., Corinth, Miss.; F. A. Neergood, Harriman; C. E. Gallion, Oakdale; S. L. Edwards, S. D. Terrell, G. L. Brown, Cummings Harris, W. L. Howard, O. S. McCown, Memphis; N. T. Dulaney, Bristol; L. McNeil, Hampton; E. E. Hunter, Elizabethton; J. G. Butler, Mountain City; T. W. Fields, Dresden; A. D. Berryhill, R. McKenzie; J. R. Fowlkes and G. C. Thomas, Greenfield.

We are all glad to have these names on our roll. Some of them are new, some of them have been there before and should have been on the list earlier this year, but all of them are welcome into the fellowship of the Tennessee State Medical Association.

NOTES AND COMMENT

Dr. J. S. Harris, formerly at Minor Hill, has located at McMinnville.

Dr. C. M. Gower, Trenton, has been commissioned Lieutenant, M. R. C.

Dr. A. T. Ingalls, Lieutenant M. R. C., has been ordered to Fort Oglethorpe.

Dr. V. Sumpter Campbell, Murfreesboro, attended the A. M. A. meeting at New York in June.

Several colored physicians in Tennessee have offered for service and have been accepted.

If the doctors of the land do not offer for service, still the Army and Navy *must* have doctors.

Dr. G. E. Horton, Wartrace, has gone to

Fort Oglethorpe as a Lieutenant in the Medical Reserve Corps.

Dr. J. W. Bauman, Nashville, a Lieutenant in the Medical Reserve Corps, has been ordered to Fort Oglethorpe.

It is said that 3,000 medical men will be assembled in the training camp at Fort Oglethorpe, Chattanooga.

Dr. Jno. M. Lee, Nashville, has been commissioned Lieutenant in the Medical Reserve Corps, U. S. Army.

Recruits must be examined, and must be examined by medical officers. *Somebody* will have to do this work.

If doctors do not volunteer, doctors will be drafted, for doctors must be had to care for the sick and wounded.

Dr. Homer Reese, Gallatin, has been ordered to Fort Oglethorpe as Lieutenant in the Medical Reserve Corps.

Dr. Harvey Cushing, our great American brain surgeon, is said to be hard at work in the very front in France.

Dr. E. T. Newell, President of the Tennessee Medical Association, attended the New York meeting of the A. M. A.

Dr. B. G. Tucker, Nashville, has been made Superintendent of the Nashville and Davidson County Tuberculosis Hospital.

Drs. R. B. Underwood and A. R. Porter, Memphis, are in the medical officers' Training Camp at Fort Oglethorpe.

Dr. A. S. Dabney, Nashville, has joined the Tennessee Hospital Corps which has lately been ordered into active service.

There cannot be any "strings" on your en-

listment. If you go in, you go for whatever comes and you go where you are sent.

Dr. Jas. Brew, Nashville, has again entered the service of the United States, having been accepted as a Medical Officer in the Army.

Dr. Larkin Smith, Nashville, has been selected as the Chief Medical Officer of the Artillery forces now being raised in Tennessee.

Dr. John B. Steele, Chattanooga, has been ordered to Fort Riley, having received a commission in the Medical Reserve Corps of the Army.

Dr. G. C. Thomas, Greenfield, has been chosen Secretary of the Weakley County Medical Society, succeeding Dr. T. E. Sawyers, deceased.

There are about 3,400 doctors of all sorts—and there are lots of "sorts"—in Tennessee. About 400 of the best sort are wanted to care for the fighting men.

Dr. John Morris, Somerville, of the Medical Reserve Corps, has been ordered to the Army Medical School at Washington for instruction before assignment to active duty.

If every doctor were already capable of giving the right sort of service in the Army, the Government would never have established training camps for medical officers.

Dr. Geo. C. Williamson, Nashville, has offered for service with the Tennessee troops and has stood the examination required of all medical officers who enlist in this service.

Chiropractors and all sorts of fakirs are watching for a chance to make capital out of any slowness upon the part of the physicians of the country in the matter of enlistment.

The membership of the Shelby County Medical Society has reached a new mark. Dr. R. H. Miller, Secretary, has reported just 218

names for 1917 enrollment. This is just six more than one-seventh of the entire membership of the Association. And when Dr. Miller gets 'em, he reports 'em. Thank you, Dr. Miller.

We see from the newspapers that the Roane County Medical Society met at Rockwood on June 18, with twelve members present. Three applications for membership were presented.

Of course, you could do it better than Gorgas and Braisted and Wilson are doing it, and would do it in a very different way. But it ain't your job, and they are doing their best.

Drs. Perry Bromberg and A. F. Richards, delegates from Tennessee State Medical Association to the American Medical Association, were on hand at the New York meeting in June.

According to Maj. Goodwyn, of the Medical Service of the British Army, not more than 2 per cent of surgeons serving have been lost. So all the hair-raising tales are just tales.

You are not commissioned an officer in the Medical Reserve Corps until you have formally accepted your commission. We have heard of one or two who seem to have known this before.

The Surgeon General of the Army has stated that medical students will not be exempted from the draft, but will be given conditional and limited furloughs to continue their studies.

The personal comfort of the prospective medical officer cannot be guaranteed by the Surgeons General, nor can his particular preferences be taken into consideration in his possible assignments.

The facts are that the total casualties among medical officers of the British Army on the western front to June 23 were just 902, of which 195 were killed, 707 wounded, and 62 died of disease.

The doctor on the exemption board will be called upon to exhibit patriotism of the highest type, and no more important service will ever be given than that which he will give if his duty be well performed.

Maj. Jno. W. Hanner, M. C., U. S. A., has been ordered to the Rockefeller Institute for a special course of instruction. "Jack" Hanner is another one of "our fellows" who has made good in the Medical Corps of the Army.

"Only two of all the doctors in old Lauderdale are not paid up and we hope to get them later." An extract from a letter from Dr. J. W. Sanford, Secretary Lauderdale County Medical Society, which shows how the thing is done—by going after 'em and keeping after 'em.

Dr. G. F. Aycok, Nashville, after making a magnificent record in his examinations for admission into the Medical Corps of the Regular Army, has been ordered to the Army Medical School at Washington. In this young man Tennessee medicine gives to Uncle Sam one of her most promising sons.

Dr. L. E. Trent, formerly in practice at Erwin and later one of the physicians in one of the Iowa hospitals for the insane, is now in service at Central Hospital, Nashville, having succeeded Dr. C. C. Odom, resigned, to re-enter private practice.

Drs. J. H. Morrison, Cumberland Gap, Halbert Robinson, Bearden; Wm. R. Cross, Knoxville; L. W. Newland, Knoxville, and Eugene Abercrombie, Knoxville, are some of the young East Tennessee physicians who have offered for the Medical Reserve Corps.

The State Veterinarian has ordered a quarantine against all dogs in Shelby county, where rabies has become quite prevalent. One death at the Marine Hospital in Memphis has been attributed to rabies. It's a pity that the State Veterinarian or some one else cannot devise some method for putting all dogs out of business in Tennessee. This is no time for feeding dogs.

SOCIETY PROCEEDINGS

OBION COUNTY.

The Obion County Medical Society met at Obion on June 12 with a fine attendance. The President, Dr. J. B. Havener, was in the chair and made a most efficient officer. The subject of "Military Preparedness" and other seasonable "troubles" were discussed. Dr. I. H. Jordan contributed a very interesting paper, the discussion of which was friendly and helpful. The next meeting on the second Tuesday in August will be held on Reelfoot Lake. Dr. Carter, of Obion, won the gratitude of members present by furnishing cigars. Resolutions on the death of Dr. D. M. Pearce were adopted.

J. D. CARLETON, Secretary.

RESOLUTIONS ADOPTED BY THE WILLIAMSON COUNTY MEDICAL SOCIETY.

At its regular monthly meeting on Tuesday, May 15, 1917:

Resolved, that in recognition of the patriotism of those members of the medical profession in this county who volunteer to serve in the United States Army or Navy during the present war, we, the members of the Williamson County Medical Society hereby pledge ourselves to turn over to the families of the members of the medical profession who may be called into the service of the United States, one-half of all fees obtained for attending their patients during their absence.

K. S. HOWLETT, Secretary.

CITRIC ACID AND CITRATES.

Citric acid and the alkali citrates, potassium citrate and sodium citrate, are oxidized in the body with formation of carbonates and hence tend to increase the alkalinity of the blood. Citric acid and the alkali citrates tend to render the urine less acid and, in large doses, render it alkaline.—Journal A. M. A., April 21, 1917, p. 1206.

MISCELLANEOUS

ALCOHOL'S PART IN THE WAR.

Shall We Lose With Liquor or Win Without?

By Allen Rogers, Ph.D.
American Chemical Society.

Alcoholic beverages must go.

The requirement is clear. Alcohol can fill liquor glasses to satisfy the wilful appetite of thousands of Americans living comfortably at home, or it can be transferred to fill a hundred hospital needs to save the lives and relieve the sufferings of other thousands on the battlefields.

Alcohol may play its part in the gayeties of the club, in the hotel, and in the home—or it may play a bigger part in the manufacture of the munitions which alone can bring us victory. It may be transferred into beverages which make for pleasure, or it may become the fuel that will serve the nation when other fuels are lacking.

Alcohol can no longer satisfy the demands of the country's indulgence only. It must serve the thousands of industrial purposes that are the vital needs of America at war. And in war time, everything must go that hampers the work of a successful mobilization of the country's resources, and leads to final victory.

Every extravagance and waste in home life and public life must be eliminated, and the great industry of alcoholic beverage manufacture must bow before the demands of the nation in its time of crisis. This is no sentimental demand—nor religious, nor even moral—it is the demand of the nation's chemists, based upon scientific analysis.

No man would assume that we should curb our supply of ether in order to increase our supply of beverages in time of peace, and no man will say that our soldiers should be denied the greatest possible protection because the manufacture of their medicines depends upon the reduction of our alcoholic drinks. As a local anesthetic, as a heart and respiration stimulant, and for many other purposes,

ether, so largely made of alcohol, finds wide use on the battlefield.

Ether may be used in connection with kerosene to produce a very satisfactory substitute for gasoline in motor cars. It may be employed as a solvent, as a cleaning solution for guns, and for many other important purposes. Its use as such, on a large scale, is impossible now, because while denatured alcohol is free, pure alcohol, used in the manufacture of ether, costs \$2.40 a gallon, of which \$2.00 is tax. European countries have removed this tax, and ether is now made in quantities—Europe's plan has been successful. It was forced upon her by dire necessity. Let us learn by her experience.

Alcohol is of fundamental necessity as a solvent in the manufacture of explosives. We must be sure that the present abnormal demand is not hampered even remotely. Consider the comparative importance of alcohol for beverages and for explosives in war times.

As fuel, alcohol finds a great use, and fuel will be in unnatural demand as the war goes on. For internal combustion engines, for cooking stoves, and for numerous other purposes, alcohol, as a fuel, must help win the war. Emergencies will arise, and shortages in other fuels will appear suddenly. There must be no curtailment of this source.

Not only for ether, for explosives, and for fuel, does this country need alcohol. This need goes into nearly every industrial field, and this need is always increased by war. For a great number of medicinal purposes other than ether, alcohol is essential; the preparation of dyestuffs depends upon it, and the manufacture of many shellacs and varnishes. These are only a few of alcohol's industrial uses.

"But why not use wood alcohol for all these purposes," goes the argument, "and continue using grain alcohol in the manufacture of liquor?" And the nation's chemists answer "impossible." The vapors of wood alcohol are blinding, and its use is highly dangerous for all manufacturing.

Efficiency? Economy? What will become of these if the great industrial units, now elaborately organized and busily engaged in

the manufacture of alcoholic beverages, must close up shop, abruptly?

Don't close the breweries and distilleries. **Instead of making alcohol for drinks, make it for the manufacture of explosives, make it for ether and other medicinal purposes, make it for fuel, make it for dyes and shellacs—make it for every use to which Uncle Sam's chemists can put it in the supreme moment when all things must go to the melting pot to be turned to the nation's greatest good.**

FOR SALE.

Best location for country physician. Nearest doctors 8, 12, 18, 20 miles. Collections 90 per cent. Good reason for selling. Will introduce successor. All for price of house and lot. Terms. Address Journal Tennessee State Medical Association, 349 Doctors' Building, Nashville, Tenn.

ABOLITION OF THE SALVARSAN PATENT.

The Chicago Medical Society and the St. Louis Medical Society urge the abolition of the Salvarsan patent. The patent should be abrogated, not only because the patentees have not supplied the demand, not alone because they have dictated to the medical profession who should have the drug and how much a physician might have, not alone because of the war with Germany, not alone because of the special needs of the government at this time for the control of venereal diseases, not alone because, as some claim, the patent at Washington does not correctly describe the product, but also because the people who are supplying this product are charging prices that are exorbitant. In order that a sufficient supply to control the ravages of one of the most serious diseases that afflict humanity may be assured, it is the duty of Congress to abrogate the Salvarsan patent.—Journal A. M. A., April 21, 1917, pp. 1187 and 1203.

Let there be no slackers! But, also, let there be none to offer themselves, provisionally, asking that they be favored in this, that

or the other way. In promoting to higher ranks, the Surgeon-General undoubtedly will avail himself of the best information concerning each man's fitness, and in assignment to duty the same care will be exercised. An internist will not be assigned to operative work, nor will a sanitarian be expected to take the place of an ophthalmologist. Individual preference and special fitness, we may rest assured, will receive full consideration in all cases. But it must be remembered that the exigencies of the situation may demand, at times, that the medical officer sacrifice his personal and professional pride and do a service which he may consider a drudgery. This sacrifice he should be willing to make for his profession's honor and for his country's good.—Journal A. M. A.

A few prominent men have expressed great disinclination to be assigned to the physical examination of recruits. Yet no more important function falls to the lot of the medical officer than this work. Every physically unfit man in the enlisted ranks is not only a dead weight to be carried for the present, but also a potential burden on the pension lists to be borne in the future. So far as possible, the final examination of enlisted men in the concentration camps will be made not by individual medical officers, but by boards of experts. On these boards there should be men skilled in the recognition of surgical, circulatory, genito-urinary, dermatologic, pulmonary, neurologic, ophthalmologic and otologic defects. If an army of 1,000,000 men is to be assembled, two or three times this number may need to be examined. These examinations must be carefully, scientifically and conscientiously made. No greater honor and no greater responsibility can come to a medical man, eminent in any of the specialties, than to be placed on such a board. No such opportunity—rich in material from among our diversified population, important to the success of our cause, valuable from a scientific point of view, worthy of the high skill of the specialist—is likely to come again to the medical profession.—Journal A. M. A.

BOOK REVIEWS

REPORT FROM THE PATHOLOGICAL DEPARTMENT AND THE DEPARTMENT OF CLINICAL PSYCHOLOGY. Central Hospital for the Insane. Vol. VI, 1913-14, 1914-15.

This is a report from both of these departments of this hospital, and a very complete one. It shows that the men connected with the institution are doing good work and thorough work, and that they are handling the patients in a thoroughly modern and scientific way. They also utilize the clinical material for instruction to the medical students of Indiana and to those members of the general profession who will avail themselves of the opportunity. This report also contains a complete reprint of all scientific papers written by the members.

A MANUAL OF NERVOUS DISEASES. By Irving J. Spear, M.D., Professor of Neurology at the University of Maryland. Baltimore. With 72 illustrations. W. B. Saunders Company, Philadelphia and London. 1916.

Manuals are as a rule useless books. They give an indefinite and insufficient amount of data because of their abbreviated form. But a good manual on nervous diseases has far more reason for existence than on any other subject, because of the usual amount of indifference on the part of the profession to this subject.

This manual is exceptionally good, and most of the chapters comparatively complete. We would especially commend the opening chapters on the physiology and anatomy. They cover these subjects fully enough to give a good working basis for neurologic diagnosis. We also commend the illustrations, which are extremely good, and they are not usually found in manuals. The language is clear and the typographical errors few. This is quite a large manual, containing 650 pages, and for the purposes set out in the author's preface it serves them well.

TEXT-BOOK OF SURGICAL OPERATIONS. By Prof. Fedor Krause, Directing Physician, Augusta Hospital, and Emil Heymann, M.D., Chief Physician, Augusta Hospital, Berlin. Translated by Albert Ehrenfried, M.D., Boston. In six volumes. Vol. II. Rebman & Co., Herald Square, New York. Cloth, \$7.00.

This volume of the Text-Book on Surgical Operations, by two distinguished Berlin surgeons, is devoted to description and discussion of operations on the head and face, including brain surgery, and the neck and upper extremities. There are some very fine illustrations. The methods of the authors are well presented.

TRAUMATIC SURGERY. By John J. Moor-

head, M.D., Adjunct Professor of Surgery in New York Post-Graduate School and Hospital. 760 pp., 522 original illustrations. W. B. Saunders Company, Philadelphia. Cloth, \$6.50.

The average doctor confronted with an emergency case is often considerably concerned over the question of what he should do and how he should do it. In this book of Dr. Moorhead's can be found descriptions of approved methods of treatment of fractures and other traumatic injuries. The book is splendidly illustrated—a most desirable feature of any work of this character. Dr. Moorhead strongly advocates the open air treatment of all wound infections. A chapter on the medicolegal phases of accident surgery is a valuable feature.

EXPERIMENTAL PHARMACOLOGY. By Dennis E. Jackson, M.D., Associate Professor of Pharmacology, Washington University Medical School, St. Louis. Fully illustrated. C. V. Mosby Company, St. Louis.

This is a manual of experimental pharmacology for the guidance of the student, splendidly arranged and beautifully illustrated. Directions are clearly and fully given and splendid judgment has been shown in the selection of experiments used for the purposes of instruction.

IMPOTENCY, STERILITY AND ARTIFICIAL IMPREGNATION. By Frank P. Davis, M.D. C. V. Mosby Company, St. Louis.

Just one more!

THE MEDICAL CLINICS OF CHICAGO. Vol. 2, No. 6. May, 1917. W. B. Saunders Company, Philadelphia.

This is an index number.

Jaundise, Enterocolitis, Carcinoma of the Esophagus, Hemopneumothorax, Pernicious Anemia, Gonorrheal Arthritis, Arrhythmia, Tabes Dorsalis, Carcinoma of the Hepatic Flexure, Luetic Infection of the Lungs, Hematemesis, Spontaneous Pneumothorax Due to Euphysema, Acute Nephritis Following Tonsillitis.

We hope that the clinic of Dr. Frank Smithies on chronic enterocolitis will be widely read. Some of these days our laboratory men, practitioners and text-book writers will wake up to the fact that *amaeba coli*, *trichomonas*, *carcinoma*, *lamblia*, and grosser intestinal parasites are worth considering as factors in the production of digestive disorders and anemias.

PRACTICAL MEDICINE SERIES, 1917, Vol. 1, General Medicine. Edited by Frank Billings, M.D. The Year Book Publishers, Chicago.

This is the usual splendid review of the year's

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MEDICAL DEPARTMENT
NEW YORK

progress in medicine. A chapter on "Research Work" is interesting indeed. Pellagra, included in the list of infectious diseases, receives considerable attention with small effect.

ASTHMA. By Orville Harry Brown, M.D., formerly Assistant Professor of Medicine, St. Louis University. C. V. Mosby Co., St. Louis.

Here we have a book on asthma by a man who has prepared himself to write a book on the subject by nine years of intensive study. It is not an overnight production. For these reasons and because the style of the author is most pleasing—to say nothing of the vast importance of the subject treated and the vast ignorance that exists concerning it—this book should have a ready sale and should be carefully considered by the profession. The author's argument is for his own theory, which he calls the "Nonpassive Expiration Theory," but he presents the many theories of other writers, and goes fully and most interestingly into the history of asthma. The bibliography in this connection is most valuable. As Dr. Geo. Dock says in his "Foreword," "The student and the practitioner can find in this book a true picture of the previous speculations and the present knowledge of asthma expressed clearly and concisely."

DIAGNOSIS FROM OCULAR SYMPTOMS. By Mathias Lankton Foster M.D., New York. Reiman Company, New York.

This volume of 490 pages is devoid of illustrations and for that reason is not as valuable a book as it would otherwise be. There can be no question but that a reference book of this sort has been badly needed for a long time, and Dr. Foster has performed a splendid service in analyzing "eye-symptoms." His interpretations will be found most helpful to a large mass of practitioners who have ill-defined and often entirely erroneous ideas as to the significance of findings in the eye. Also, his work will impress the very great value of ophthalmologic examinations for the purposes of scientific diagnosis.

TEXT-BOOK OF OPHTHALMOLOGY. By Hofrat Ernest Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation by Alexander D. Duane, M.D., Surgeon Emeritus Knapp Memorial Hospital, New York. Fifth American edition. J. B. Lippincott Company, Philadelphia. Cloth, \$7.00.

Here is a work long recognized as a classic. This new fifth edition is better arranged than those which have preceded it, contains all that is new since the last edition appeared, and has, as one of its finest recommendations to continued and further popularity, frequent and exceedingly valuable contributions direct from the pen of the distinguished translator, Dr. Duane. The most

complete and the very best presentation of our knowledge of the human eye certainly needs no review in these columns.

THE TREATMENT OF EMERGENCIES. By Hubley R. Owen, M.D., Surgeon to the Philadelphia General Hospital, Chief Surgeon of Philadelphia Police and Fire Bureaus, etc. With 2x9 illustrations. W. B. Saunders Company, Philadelphia, 1917.

This book was written by Dr. Owen for the instructors of first aid to the injured, for police and fire surgeons, ambulance surgeons and nurses. Your reviewer considers it the best thing of its kind which has yet come to his notice. The man who has had daily experience in handling emergencies over a long period of time knows what to do and how to do it, but even the surgeon who is called upon to deal with an emergency just once in a while is many times at a loss to know how to do, even though he knows what to do. Dr. Owen's book will help him very greatly. But the place where the book will find its best and greatest use is for the purposes of instruction and guidance for classes in first aid in shops, factories, police and fire departments, and among men and women who work where emergencies frequently must be dealt with.

PHYSICAL EXERCISES FOR INVALIDS AND CONVALESCENTS. By Edward H. Ochsner, M.D., Chicago. C. V. Mosby Company, Chicago.

This is a little volume describing forty simple physical exercises which can be used to great advantage by anybody, but which are particularly useful for the purposes of convalescents and those who have small opportunity for engaging in outdoor pursuits. Each exercise is described in clear and concise language and by illustrations which show very clearly the movements which are to be gone through. This little book goes to show the many-sided thoroughness of its distinguished author.

PARRESINE.

A mixture composed of paraffin, 94 to 98 per cent., gumm elemi, 0.20 to 0.25 per cent., Japan wax, 0.40 to 0.50 per cent., asphalt, 0.20 to 0.25 per cent., and eucalyptol, 2 per cent. Parresine acts mechanically. It is used in the treatment of burns, "frostbite," "chilblains" and for covering denuded surfaces. For use parresine is melted and applied while liquid by means of an atomizer or brush. The Abbott Laboratories, Chicago. (Jour. A. M. A., May 12, 1917, p. 1406).

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THE SYMPTOMATOLOGY AND DIAGNOSIS OF EMPYEMA OF THE ACCESSORY SINUSES OF THE NOSE.*

By Hilliard Wood, M. D.
Nashville.

The two classical symptoms of empyema of the accessory sinuses of the nose are pain and pus discharge; and yet either, or both, of these symptoms may be absent, or so slightly developed as to have been unobserved. Pain is usually the first symptom of which the patient complains. It is due to the pressure of the secretion pent up in the sinus. It is a pressure pain, and increases as the pressure of the retained secretion increases. Likewise, it is relieved by the escape of the secretion either by natural or artificial means. With the establishment, therefore, of drainage, the pain subsides, and unless pressure recurs does not often return. The pain is unilateral, and is usually located in the neighborhood of the sinus involved, but may radiate to surrounding parts. In chronic empyema, pain may take the form of headache, which recurs in the same location and is relieved by steam inhalations.

The discharge, though in chronological order occurring after the pain, is by far the more characteristic, persistent and annoying symptom. This discharge is a mixture, in varying proportions, of mucus and of pus, the mucus predominating in the earlier stages and milder types. In its typical form it is a light, straw-colored, creamy pus, which usually remains

fluid, but which occasionally dries into hard masses. It may be blown from the nose in front, but more often flows backward into the naso- and oro-pharynx, where it may be "hawked up" or swallowed. Usually it has little or no odor, but may be offensive, especially when of long standing, or when it comes from an empyema of the antrum of dental origin.

This flow of pus is not uniform during the twenty-four hours, but is greatest in the morning, and when the head is held in such a position as to favor drainage from the involved sinus.

This discharge does not always drain through the nose, but may drain into the mouth, as from the antrum by openings through the incisive fossa, or alveolar process; or from the frontal sinus by fistulae through its floor or anterior wall.

The amount of discharge varies much in different cases, and in the same case at different times. It is not present in the earliest stage, when the secretion is retained and under pressure, and in latent empyema may scarcely be noticed.

It is a symptom commonly misunderstood by patients, being attributed by them to nasal catarrh. As it flows back into the pharynx it produces a "dripping in the throat", and may by the physician be diagnosed as post-nasal catarrh. I believe that as we examine our cases more critically we will find that the secretions in the nose come less and less from the nasal membrane, and more and more from the accessory sinuses. In unilateral sinusitis the patient may state that the discharge comes from only one side of the nose, but this refers to the discharge blown out in front, for when

*Read at meeting of the Tennessee State Medical Association, Nashville, April, 1917.

the discharge flows back into the throat, the patient does not know from which side it comes.

Among the graver symptoms, or sequelae, are the multiform manifestations of focal infection. As an indication of the importance of this phase of the subject, Billings, I believe, places the accessory sinuses third in the order of frequency as infection atriæ. As the prevalence of focal infection is more and more appreciated, so will a knowledge of sinusitis grow in importance. It may now be said that no case of focal infection has been adequately examined until the condition of the accessory nasal sinuses has been ascertained.

Aprosexia may occur in empyema of any of the sinuses, but I have more commonly associated it with ethmoiditis. Anosmia is not unusual; likewise, the presence of subjective odors of an unpleasant kind.

Tenderness upon pressure over the antrum is not usually present, but tenderness upon pressing upward against the floor of the frontal sinus is sometimes elicited in empyema of that cavity.

The diagnosis of empyema is suggested by the foregoing symptoms, and is confirmed by the physical examination. The physical examination should begin with anterior and posterior rhinoscopy. Often this will show a tumefaction of the middle and inferior turbinates on the diseased side. In other cases the turbinates appear normal, and in some may be shrunken.

Pus is usually seen in the nose, and its characteristic location is either the middle or superior meatus. Pus exuding from beneath the middle turbinate comes from one or more of the anterior group of cavities, and pus in the superior meatus comes from one or more of the posterior group. A characteristic of this pus is that when wiped away it rapidly reappears in the same location. Such a thing could hardly occur except from empyema.

Believing that pus in the naso-pharynx is indicative of empyema, I have sometimes thought that the location of the pus suggested the group of cavities involved, in that the discharge on the posterior wall of the naso-pharynx indicates empyema of the posterior group, while pus on the upper surface of the

soft palate indicates empyema of the anterior group.

Posterior rhinoscopy may reveal the presence of pus when none is seen by anterior rhinoscopy, especially in empyema of the posterior group of cavities. It should, however, be kept in mind that the failure to find pus in the nose does not disprove the presence of empyema.

The next step in the examination is transillumination. This gives us valuable information about the frontal sinus and maxillary antrum, especially the antrum. Considering the few moments it takes, and the ease with which it is done, I do not know of any form of examination which, for so slight an outlay, gives so much information. I believe it should be used as a routine practice in all nose and throat cases.

Shadows over the antrum may be due to dental plates; to tumors of the superior maxilla, especially sarcomas and carcinomas; to empyema of the antrum; or to insufficient illumination. An examination of the mouth for dental plates, of the contour of the superior maxilla, and the regulation of the illumination by means of a rheostat will remove these sources of error. It must be admitted that at times there are umbra which cannot be readily explained—cases in which irrigation excludes the possibility of pus in the antrum. Per contra, empyema may be present when there is the faintest shadow over the antrum. In these cases irrigation will remove a small amount of translucent discharge.

The shadow over the antrum is due partly to the pus, but more especially to the blood in the inflamed membrane lining the sinus, as is proven by the fact that the shadow persists even after the pus is removed by irrigation. The progressive clearing of the shadow during treatment is of favorable omen, as indicating the gradual reduction of the inflammation. In my experience, I have more often found a marked shadow without pus than a good illumination with us. There are other cases in which the shadow is so questionable as to be of little value. As a rule a good illumination of the face, including a pupillary reflex, may be depended on as excluding empyema of the antrum is the removal of pus from the antrum. I regard transillu-

mination as final when there is no shadow, but as not final when there is a shadow. Any antrum showing a shadow should be irrigated.

The final proof of the presence of pus in an antrum is the removal of pus from the antrum. This is done as follows: The naso-antral wall opposite the inferior turbinate is cocaineized. Both nasal cavities are then douché with warm salt solution to remove any secretion present, so that any discharge which comes away during irrigation of the antrum will be known to come from the antrum and not from the general nasal cavity. A curved trocar and canula passed beneath the front end of the inferior turbinate should perforate the naso-antral wall about midway. The trocar is removed, the canula being left in place. Just here it is well to have the patient's head bent forward over a basin, hold his nose and ask him to blow steadily for some moments. Pus may be expelled through the canula. This is especially valuable as a method for collecting pus for bacterial examination. It proves in the most indisputable manner the presence of pus in the antrum, and gives us an opportunity to study the pus unmixed with the irrigating fluid.

Next, the antrum is perflated, and the amount and character of pus noted. In perflation it is well to observe, by means of the head mirror and speculum, the escape of pus from underneath the middle turbinate. This observation will show us an amount of pus so small as to otherwise escape detection.

For irrigating the antrum, normal, sterile, salt solution is perhaps the best. I think all instruments and solutions should be sterile, as, if the patient has no empyema, we do not wish to produce one. When done aseptically, I have never known irrigation to produce empyema.

During either perflation or irrigation the air or solution will at times escape from the antrum into the sub-cutaneous tissues over the cheek. Air will escape more rapidly than water, and is slower in its absorption. This accident is probably caused by the end of the canula being in the sub-mucous tissues of the antrum instead of in the mucous cavity proper, and is sometimes difficult to avoid owing to the great thickness of the inflamed membrane. I regard perflation and irrigation as final evi-

dence in settling the question of the presence of pus in either the antrum of the frontal sinus.

Finding pus in the antrum does not complete our diagnosis even as to this cavity. The probable cause should, if possible, be determined. In this connection it will be recalled that a certain, though not accurately determined, percentage of cases are of dental origin. In settling the question of dental origin, Roentgenograms of the roots of the bicuspid and molar teeth and an examination by a competent dentist will be of value.

The diagnosis should also determine whether the pus originates in the antrum, or whether this cavity merely acts as a reservoir for the pus from some other sinus. Pus draining into the antrum could come only from the frontal sinus, or anterior ethmoid cells. If these latter are normal, the pus in the antrum must have originated there. Where all of the sinuses of the anterior group contain pus, it is difficult to prove the origin of the secretion in the antrum. In this connection it will be recalled that the antrum is the only sinus which may serve as a reservoir for the secretion from other cavities, or the empyema of which may be of dental origin.

The presence of polypi in the antrum may be suggested by a valve-like obstruction to the passage of air in perflation, or of water in irrigation; but their presence can be positively determined only by direct inspection, or the use of Holmes pharyngoscope, after an opening has been made into the antrum.

Bare bone, which is rare, is detected by a probe, and suggests gumma, malignancy, tubercle or trauma.

In an examination of the frontal sinus, the same general rules should be followed as in the investigation of the antrum. As stated, tenderness upon pressure, not on the anterior wall, but upward against the floor, is often present. Persistent congestion of the conjunctiva may be noted. Rarely is redness or swelling seen over the sinus. Pain is a variable symptom. The discharge, if present, usually escapes from underneath the extreme anterior end of the middle turbinate, and this end may appear normal or noticeably swollen.

Transillumination, which is so valuable in connection with the antrum, is less dependable

when applied to the frontal sinus. This is largely due to the normal variations in the frontal sinus, which may be absent, or rudimentary, or of usual size, or abnormally large. In general it may be said that a brilliant illumination of the frontal sinus disproves empyema, but a shadow, either relative or absolute, may be due either to empyema or to undevelopment of the sinus. This confusion is increased by the fact that in the same patient the two frontal sinuses vary greatly in size, one sinus often being increased in size at the expense of the other.

A shadow over the frontal sinus, associated with a suggestive history and the symptom complex of empyema, calls for Roentgenograms of the sinus. These should be two in number, one taken antero-posteriorly, and one transversely. If these show the frontal sinuses to be normal in size, and transillumination shows a shadow, the presence of empyema should be considered as highly probable. Moreover the Roentgenograms will usually show the white cloud due to the pus.

The final proof is furnished by the results of perflation and irrigation of the sinus. In many cases, after cocaineization, the frontal sinus canula can be passed with little difficulty, and without disturbance of the middle turbinate. In others the front end of the middle turbinate will need to be pushed toward the septum so the canula can get in line with the naso-frontal duct; and in some the front end of the turbinate will need to be removed in order to introduce the canula. In the interest of accuracy of diagnosis I think the middle turbinate should be disturbed as little as possible, as the presence of blood makes difficult the detection of pus when blown or washed out, especially if the pus is in small quantity.

With the canula in place the examiner, with head mirror and speculum, should observe the effects of perflation. In this way all of the pus blown out will be seen to flow down by the side of the canula. In this way, when the pus is in small quantity, its detection is more certain than by irrigation. Finally, the sinus should be irrigated with sterile, normal, salt solution.

The question of empyema of the frontal sinus would seem to be settled by results of perflation or irrigation, and yet in this there is

the possibility of error. An anterior ethmoid cell may be enlarged and encroach upon the frontal sinus, and the canula may enter this instead of the frontal sinus, and so give misleading results.

In some cases there are no means of knowing the canula is in the frontal sinus except by the Roentgenogram. I recently had a striking proof of this. A negro man came to the Vanderbilt clinic, stating that twenty years ago he was hit upon the forehead, and that the anterior bony wall of the right frontal sinus had been at that time removed. Upon examination I found marked bulging over the right frontal sinus, and palpation indicated fluid. Thinking there was secretion in the right frontal duct, into the nose. Question: Where did ition was expelled. The absence of secretion, and all the impressions I received, indicated to me that the frontal sinus was normal. Under novocain anaesthesia I incised the swelling and emptied out of the sinus some three or four drachms of dirty mucus. I then passed a probe from above, downward through the naso-frontal duct, into the nose. Question: Where did my canula go when, a few moments before, I thought I was perflating the frontal sinus?

In the examination of ethmoiditis, much aid can be obtained by the presence of pain deep in between the eyes; by prominence or polypoid degeneration of the middle turbinate, which is often displaced toward the septum; by the presence of pus in the middle meatus from the anterior ethmoid cells, or in the superior meatus from the posterior ethmoid cells. Under cocaine anaesthesia, the middle turbinate may be pressed over toward the septum, and an ordinary strabismus hook passed upward through the middle meatus, external to the middle turbinate, and made to enter the ethmoid cells. Following the hook with the eye, it will be seen whether pus escapes when the cells are punctured. The escape of pus proves ethmoid empyema, but the absence of pus does not disprove empyema. The use of the X-ray will be referred to later.

The sphenoid sinus is the deepest of all the accessory sinuses, and is, for that reason, the most difficult of access and of investigation. Pus from this sinus escapes at the rear end of the superior meatus, and is best seen by posterior rhinoscopy. From this point it flows

down or hardens upon the posterior wall of the naso-pharynx. For this reason I believe that many cases of sphenoidal empyema are diagnosed as post-nasal catarrh, and treated without benefit.

Probing, perflation and irrigation of the sphenoid sinus are not practical when the middle turbinate is of normal size and position. In some cases it is possible, after shrinking the middle turbinate with cocaine and adrenalin, to introduce a canula into the sphenoid sinus, but such cases are the exception, and not the rule. When the middle turbinate is atrophied, or after its removal, the introduction of a canula into the sphenoidal ostium is not difficult. From the vestibule of the nose it is distant about two and one-half inches, and with the head in primary position, its direction is about forty-five degrees above the horizontal. In my experience, the introduction of a canula into the sphenoid sinus is very easy if it can be done at all; but unfortunately it can seldom be done. In fine, the sacrifice of the middle turbinate is necessary to gain free access to the sphenoid sinus. For the treatment of a known empyema of the sphenoid, the sacrifice of the middle turbinate may be justifiable; but I do not believe that in ordinary cases such sacrifice is justifiable merely as a means of diagnosis.

The X-ray has been a distinct aid in the study of the sinuses. In the antrum it not only shows the presence of pus, but gives valuable information as to the possible dental origin of the empyema. In the frontal sinuses it shows, by transverse and antero-posterior exposures, the size of the cavities and also the presence or absence of pus. When used in connection with transillumination and irrigation, it gives us dependable information about the frontal sinuses.

The X-ray gives us more valuable information about the ethmoids than any other of the accessory sinuses. These sinuses can neither be transilluminated nor irrigated, so that the diagnosis must depend upon the clinical history, the physical appearance of the parts and the Roentgenograms.

The sphenoid sinuses are more difficult to photograph than any other of the accessory cavities. Transverse exposures are worth little, as the sinuses overlap. Perhaps the best

way is to put the patient in the extreme Rose position, with the plate at the back of the head, slightly above the external occipital protuberance, and the light directed beneath the chin, through the sphenoids to the plate. The best Roentgenograms of the sphenoids I have seen were taken in this way.

Theoretically it would seem that inflammation should affect the different accessory nasal sinuses with approximately equal frequency, and I personally believe that this is largely true. And yet reflection will show to each of us that we treat many more cases of empyema of the anterior sinuses than of the posterior. The investigation of the deeper sinuses is more difficult, and for that reason pathology in them is more often overlooked.

In conclusion, I wish to warn against basing our diagnosis upon one single sign or symptom, and to insist that each case be submitted to every test that can throw any light upon it.

TREATMENT AND PROGNOSIS OF THE CATARRHAL AND SUPPURATIVE IN- FLAMMATIONS OF THE NASAL ACCESSORY SINUSES.*

By Herschel Ezell, M. D.
Nashville.

Maxillary Sinusitis.

Galen was the first to mention the maxillary sinus. However, the first description of any real value was made by Highmore in 1651, since which time the cavity has borne his name. At the same time he discovered and reported a case of suppurative disease of this sinus. Shortly afterward Meibomius invented the operation described by Cooper in 1717. Later Grooch and John Hunter proposed perforating the antrum through its nasal surface. In 1886 Ziem pointed out the frequency of infection of this sinus, and since then a number of operative measures have been devised.

Success in all acute cases of sinus disease depends largely upon the restoration of venti-

*Read at meeting of Tennessee State Medical Association, Nashville, April, 1917.

lation and drainage. The nasal fossae should be kept open, as well as the natural drainage channels of the sinuses. The parts about the middle meatus should be well contracted with applications of cocaine and adrenalin solution. These applications should be made daily at the physician's office, while the patient should be given a spray of adrenalin solution, 1-10,000, to be used at home sufficiently often to keep the nose open.

The sinus should be aspirated, either with a Politzer's bag, with a nozzle attached, allowing the bulb to expand while the patient balloons his cheeks; or with a nasal aspirator. If there is a large amount of sero-mucus, the above treatment may not be effective, and irrigations, through a canula, with normal saline should be resorted to. Suppurative conditions which will not yield to this treatment are usually chronic.

Many cases of chronic suppuration could be prevented if treated sufficiently early. This is due, in the majority of cases, to the failure of the general practitioners to refer patients with acute nasal infection to men who are doing ear, nose and throat work. The general public is not aware of the seriousness of colds, nor alive to the preventive measures against the serious complications arising from neglected colds in the head. There will be fewer long-standing cases of suppuration of the nasal accessory sinuses when it is more generally understood that a persistent nasal discharge requires prompt attention. A purulent discharge from no other organ of the body is more frequently ignored, either by the general practitioner or the public; nor is the necessity for preventive measures against the complications arising from such conditions sufficiently appreciated.

Conservative intra-nasal surgery has almost supplanted the more radical and dangerous external operations. Whether intra or extra-nasal, the operation of choice is that one which will afford the best drainage with the least possible disturbance of normal structures.

The operations for suppuration of the maxillary sinus may be divided into three classes, as follows:

First, those in which the cavity is attacked only through the mouth, as in the Cooper and Kuster operations.

Second, those in which the cavity is attacked

only through the nose as in the Krouse, Mikulitz, Canfield and Skillern methods.

Third, those in which the antrum is attacked through both the oral and nasal cavities, as in the Caldwell-Luc and Denker operations.

Radiographs show the character, extent and shape of the sinus, and are therefore very necessary before radical operative procedures are undertaken. A good result from an operation is often dependent upon the X-ray findings.

The Cooper operation should be employed when a carious tooth or root is the etiologic factor. Usually the second bicuspid, or the first and second molar, are removed; the opening enlarged, and drainage established by means of gauze or an obturator, which is worn by the patient until the cavity is healed. The advantages of this operation lie in its simplicity, and in the fact that it is often the most dependent point for opening the antrum. The disadvantages are, that if any marked pathologic changes are present, it will not suffice; that where the floor of the antrum is pocketed it will not drain, and that it is almost impossible to keep out food particles with their subsequent degeneration within the antrum.

The Kuster-Desault operation, which consists in making a free opening into the antrum through the canine fossa, is rarely performed.

The Krouse-Mikulitz operation is the simplest of the intra-nasal operations. The anterior third of the inferior turbinate is removed; the antrum is opened with a burr, and the opening enlarged, if necessary, by means of punch forceps, and the antrum irrigated through the opening, by either the doctor or the patient, until healing has taken place. The advantage of this method is its simplicity, and the disadvantage is that it will not cure if very marked pathologic changes are present.

The Canfield operation consists of the intra-nasal, submucous resection of the naso-antral wall under local anesthesia. The lower turbinate and lateral wall of the nose are cocaine-ized in the usual way. A one per cent. solution of cocaine, or two per cent. solution of novocain is injected in front of the inferior turbinate, the needle being so directed that the solution is injected under the periosteum in the canine fossa. An incision is then made from the middle of the anterior attachment of

the inferior turbinate, down to the floor of the nose. A small elevator is then introduced, and the periostium elevated from the crista pyriformis towards the canine fossa, and intranasally, the mucous membrane covering the inferior turbinate and the lateral wall of the nose. The bony structure of the inferior turbinate is then removed, and the antrum is opened with a chisel or a burr.

The bone in the canine fossa is resected, as well as the bony lateral wall of the nose, back to the posterior wall of the antrum. The cavity is packed with gauze from twenty-four to forty-eight hours. In this operation the sinus can always be inspected, and drainage is always at the lowest point. The removal of the inferior turbinate is the objectionable feature of this operation.

Skullern has devised an operation somewhat similar to the Canfield. The incision is made beginning slightly in front of and above the anterior end of the inferior turbinate, down to the floor of the nose. A second incision is made back of this, meeting the first one above and below, and a spindle-shaped piece of mucous membrane is excised. The periostium is raised from the crista towards the canine fossa, and internally towards the inferior turbinate. The antrum is now opened with chisels and bone forceps by removing the crista pyriformis. The antrum can now be inspected with an ear speculum, or with the naso-pharyngoscope, which is better. With suitable curettes all diseased mucosa can be removed. The cavity is kept packed with iodoform gauze for ten days or two weeks, but irrigations are kept up for about a month. Skullern claims the following advantages: First, the drainage is at the lowest point reached through the nose; second, the sinus can always be inspected; third, the inferior turbinate is not removed; fourth, local applications can be made under direct vision; fifth, the operation is painless; and sixth, the period of healing is shortened.

Of the combined oral and nasal operations, the Caldwell-Lue has been very popular. The operation consists of making a large opening in the anterior wall of the sinus, through the canine fossa. All diseased mucous membrane is removed, and a large opening is made in the naso-antral wall beneath the inferior turbinate, with the removal of a portion of the in-

ferior turbinate, so as to procure drainage into the nose. The cavity is packed and the oral wound is allowed to heal with or without suturing. The operation can be done under local or general anesthesia.

The Denker is much more radical than the Caldwell-Lue. In this operation the anterior antral wall and the lower portion of the angle formed by the junction of the anterior and nasal walls is removed. A large part of the inferior turbinate was removed, but now is left intact. The after-treatment is the same as in the Caldwell-Lue operation. The advantage of this operation is that nearly all of the sinus mucosa is under direct inspection. It possesses the disadvantage of the nerve supply of the teeth being interfered with, and at times the tear duct being injured.

With any of these methods, lavage can be kept up until healing has taken place. The causes of failure of the radical maxillary operation is frequently due to overlooking a decayed tooth, or necrotic bone, as well as pathologic conditions in the other sinuses, or in the nose.

A radical operation should be resorted to in all primary cases of empyema of long standing. Where the infection is from some other sinus, as the ethmoid, and the antrum is acting as a reservoir, then treatment of the ethmoid should be given and the antrum treated by irrigation. All diseased tooth roots should be removed.

Vaccines.

So far as I am able to determine, vaccines, either antigenous or stoek, are of questionable value in the treatment of sinus infections. I have used them in chronic cases, sometimes with seemingly good results. My experience has been more favorable with the autogenous vaccines. I believe, however, that if good drainage, with removal of all diseased tissue, is had, vaccines will not be needed.

Prognosis.

Resolution generally occurs in the acute, catarrhal cases. With the proper treatment, the majority of suppurative cases will be prevented. Chronic suppurations rarely get well without operation. The majority of these cases will get well with the intra-nasal and more simple operative measures, but a large

majority require more radical operative treatment. Unfortunately, a few cases are seemingly incurable, regardless of any and all treatment.

Frontal Sinusitis.

Suitably treated, probably 95 per cent. of all acute cases of frontal sinusitis recover without operation. The nose should be kept open and drainage from the sinus established. The patient should spray his nose with a 1-10,000 adrenalin solution sufficiently often to maintain ventilation and drainage. The sinus can be aspirated with a Politzer bag, or with a nasal aspirator, as in the treatment of the antrum. Should a polypus or other form of obstruction be present in the nose, such obstruction should be removed.

The surgical treatment of frontal sinusitis consists of intra-nasal and extra-nasal operative procedures. The intra-nasal procedures are indicated in all cases without complications. Fistulae, orbital and intra-cranial complications require that the sinus be approached from without.

Removal of the anterior end of the middle turbinate will, in many cases, be sufficient to effect a cure. Where there is constriction of the outlet to the sinus, it should be enlarged. A probe can be passed into the duct, followed by the passage of a canula, and the sinus irrigated with normal, saline solution. This can often be done without removal of the anterior end of the middle turbinate, and I believe we should preserve this body when possible.

Rasps, chisels and burrs are used to enlarge the outlet of the sinus, but in my opinion, should be used as seldom as possible. Too often constriction of the drainage passage into the nose follows the use of these instruments. Then, too, operating in an extensively diseased field differs greatly from dead house work, as the disease has made it easier to enter the orbital and cranial cavities.

For after-treatment, saline irrigations followed by injections of bismuth paste, should be used. The paste can be removed by injecting white petroleum, which melts at 90 degrees F., and dilutes the paste remaining, and finally, the sinus can be cleared by douching it again with normal saline at 115 degrees F.

The failure of these internal measures to give relief is sufficient indication to advise

obliterating the sinus by the external route. Quoting Dr. Freer: "In cases where with the sinus open for drainage, marked suppuration continues after the intra-nasal operation, the external operation must be resorted to." Where great swelling of the lids, exophthalmus, or cerebral symptoms indicate the existence of caries of the sinus wall, and prognosis of the disease beyond it in the form of Killian's sinusitis frontalis, the intra-nasal operation should not be done.

The external operative procedures are as follows: (1) Kunt-Coakley operation. This consists of the simple external opening of the frontal sinus, with drainage for a short period of time, and subsequent middle turbinectomy and ethmoidal curettage. This operation has given uniformly good results in acute cases, but in chronic cases a more formidable external operation will be necessary.

(2) Killian operation. This consists in the removal of the whole front wall of the sinus, leaving a bridge beneath the eye-brow, curettage and enlargement of the naso-frontal duct. The results from this operation are good, but the marked deformity following, and the successful results from the intra-nasal operations have caused the laity, as well as the specialist, to revolt against it.

(3) Modified Killian operation. The Killian method was modified, owing to the diplopia and marked deformity, leaving the roof of the orbit intact and removing less of the anterior wall, and not attacking the nasal process of the superior maxilla. The criticism of this modification is that a granulation membrane is formed, which secretes more than the original lining membrane, as well as the unavoidable depression.

(4) Beck's Osteoplastic Flap Operation. First, make a celluloid model of both frontal sinuses from an X-ray, then make an incision along the upper border of the eye-brows, connecting the same across the bridge of the nose. The skin and sub-cutaneous tissue is now dissected upwards, and the celluloid model placed over the exposed area. Now make an incision through the periosteum along the margin of the model, chisel and burr along the literal periosteal margin from one to the other into the sinus. Insert a Gigli saw in the upper edge of this incision, and saw down through

the septum of the frontal sinus on a level with the pedicle. Turn this osteo-periosteal flap down and remove all pathologic tissue, not exposing the bone to a great extent. Enlarge the outlet of the sinus in the nose, backward and outward, by means of the electric burr, avoiding the interal nasal crest. A tube with gauze packing is inserted in the sinus, and brought out the nose. The osteoperiosteal flap is now brought back into position, and the skin and sub-cutaneous tissue flaps sutured in place. The after-treatment consists in the removal of the gauze and tube on the third and fifth days, and in three weeks irrigation with normal saline or injections of bismuth paste.

The criticism of Beck's operation is that in uni-lateral cases one is liable to infect the healthy side.

The prognosis is good in the acute cases. In the chronic cases it depends upon the amount of change that has taken place in the mucous membrane, and upon the number of septa within the sinus. A large frontal sinus with many septa, and with recesses extending backward over the orbit can seldom be relieved by other than one of the external radical operations.

Ethmoiditis.

Success in the treatment of ethmoiditis comes with securing ventilation and good drainage of the diseased area. The use of an adrenalin spray here is of as much value as in the treatment of frontal sinus or antral sinusitis, in the acute cases. Applications of argyrol should be made daily. In severe cases the ethmoid cells will require partial or complete removal to secure good drainage. This can be done either intra or extra-nasally. The intranasal procedures will suffice in most cases. A great many cases will be relieved by opening the cells and removal, at the same time, of the middle turbinate. There are many ways for removing the middle turbinate. Some use scissors, while others prefer knives, but most every one uses the snare. In cases of chronic purulent ethmoiditis, nothing short of complete exentration of the ethmoid labyrinth will effect a cure. In selecting the method for ethmoid exentration, we should keep in mind the safety of the patient, and simplicity of technique. The operation is done under local anesthesia. A safe, simple and rapid method

is as follows: Remove the middle turbinate with scissors and snare, then with a small angular forceps, penetrate the bulla first, as it is the most dependent part of the ethmoid labyrinth. After the bulla has been broken into it will require but a few moments to complete the exentration of the middle and posterior ethmoid cells. Now remove the anterior ethmoidal cells by using the forceps, which cut forward. The medium plate of the ethmoid is best left in place until all the cells have been removed before its removal, as it will serve as a guide to keep away from the cribiform plate. The after-treatment consists in keeping the patient in a hospital overnight if possible, and tamponing if bleeding takes place.

I will not describe the external operation, as it is rarely, if ever performed.

Prognosis.

Unless all diseased bone is removed the condition is apt to involve other sinuses. If this is done, most cases will be relieved. Often the patient complains of dryness in the nose and naso-pharynx after healing has taken place.

Sphenoidal Sinusitis.

Hippocrates mentioned the sphenoid sinus as the possible source of a part of the pus found in the nose, but knew little about it. Hyrtl, in 1882, declared that the sphenoid sinus was beyond the range of instrumental attack. Zuckerkandl in the same year published his investigations of the sphenoid sinus, which hold good today. Others have made extensive studies of the sphenoid, but have added nothing to Zuckerkandl's work.

Schaffer, in 1885, was the first to open the sphenoid and endeavored to drain the cavity by simply enlarging the natural opening. Kilian, in 1900, suggested securing a larger opening and better drainage by operating through the pars ethmoidalis. However, it remained for Kajek to demonstrate that the best results could be obtained by a resection of the pars ethmoidalis and pars nasalis of the anterior wall of the sinus. Therefore we see that the history of the surgery of the sphenoid dates back only about thirty years.

Many of the milder cases of catarrhal inflammation which tend to recover spontaneously will yield to treatment with sprays. Irrigation of the sinus, with normal saline, through

its normal opening, will give relief in a number of cases where it can be done. The chronic cases will need to be operated upon. Kajek's method is as follows, from his own description:

"After complete anesthesia, local or general, I introduce my ethmoid hook into the posterior part of the rima olfactoria against the anterior wall of the sphenoid sinus, as high as possible, without using the slightest possible force. I then turn the hook so that the point penetrates the internal wall of the ethmoid labyrinth. When I now press the handle of the hook against the septum I am sure that the hook has penetrated deeply into the ethmoid labyrinth. The internal (nasal) wall of the labyrinth, with that portion of the middle turbinate which lies beneath, is torn through by means of a strong pull on the hook. The pieces which remain hanging can easily be removed with a pair of good nasal forceps, or the conchotomes of Grunwall or Hartman. The advantage of the hook in this procedure is not to be underestimated. It is so slender that its point can be easily seen and followed during every phase of the operation, while the curette hinders the light and requires too much room. The bleeding is usually trivial and is almost always controlled by wiping with sterile gauze. I now proceed to resect the anterior wall of the sphenoid sinus. To this end I use my bone forceps, but the osteum sphenoidale must have a definite width before we can introduce them into the sphenoid sinus. This I accomplish by means of my hook, tearing the inferior edge of the ostium piece by piece until the opening is sufficiently large to permit the passage of the bone forceps."

The after-treatment consists in keeping the parts clean by irrigating with normal saline.

Prognosis.

Many operations are followed by marvelous results, but many are failures. The suppuration continues in some cases in spite of our most earnest efforts, while patients treated expectantly sometimes recover.

(Editor's Note.—A paper on "Etiology of the Catarrhal and Suppurative Inflammation of the Accessory Sinuses", by Dr. J. McC. Hogshead was read as a part of this symposium. This paper was sent to its author for the in-

sertion of some omissions and was not returned in time for publication.)

DISCUSSION.

DR. E. B. CAYCE, Nashville: I just want to compliment the gentlemen on the papers. I also wish to thank the Secretary for bringing this question up. The fact is, nasal surgery is really just in its infancy; we are just beginning to realize that this thing that the laity calls catarrh is curable. I think the word is a misnomer, and I do not think we should encourage the use of the term, for I think it is incorrect. The laity have it firmly fixed in their minds and the idea is extant that it is incurable. I think we should attempt to refute that idea, because it is curable.

I am sorry to have missed part of Dr. Wood's paper, so that I cannot mention anything he said, except that I endorse what part of it I heard.

Dr. Ezell mentions bismuth paste. I was very enthusiastic on the bismuth paste for a while, and I had a patient that I put some bismuth paste in both antra of the nose, and eight months afterwards a doctor in Los Angeles, California, spent several days digging that bismuth out; and I used the technique that is advised by Beck himself on that occasion.

In the frontal sinus operation I do not think the Lathrop procedure was mentioned. I think the Lathrop operation is an improvement on the external frontal sinus operation. My experience with it is limited to one case, and with very happy results, and this case was rather a test case, because I had done an intra-nasal operation, also an external operation, but the drainage of the osteom closed up; we can now very readily go from either side into either of the frontal sinuses. It took a little longer than Dr. Lathrop reports the length of time it takes him to do it, but that may have been on account of the fact that I was inexperienced in the operation.

DR. ROBERTS: Do you use a motor-burr with that?

DR. CAYCE: No, sir; I use Dr. Beck's instrument. When at Atlanta, Dr. Lynch showed some instruments that he had had made; I had both of them, and I approve the Beck instrument. There is no material difference, except that the Beck instrument is a little bit longer and the end of it is a little bit more delicately made, but amply strong.

Dr. Ezell mentioned the removal of the end of the middle turbinate. Several years ago I happened to be in Dr. Mosier's clinic and he showed his specimens. He mentioned a point that I think is of value to all of us in the removal of the anterior end of the middle turbinate for frontal sinus condition, always break down the

anterior ethmoidal cells in that region. His specimens show very clearly where by doing that that you encourage drainage, and often a case has failed to drain because the cell is involved.

Now a question comes up that is right close to me; I think I stand almost alone in Nashville; that is the question of empyema of the maxillary sinus, the alveolar route and the nasal route. In a recent conversation with one of my confreres, who does a great deal of work, I asked him how many of his sinus cases (of course, I mean the maxillary antrum) were of dental origin and how many of nasal origin. He said, "Well, I think possibly there may be ten per cent of dental origin." My observation and experience has been that a very much larger majority are of dental origin, and an X-ray will show the amount of tissue that is involved. Some few months ago some man from Milwaukee, I believe, came out with an article and stated that 68% of all devitalized teeth had apical diseases. Now that should put us to thinking. Dr. Ezell mentions the fact that we must pull the teeth. I think that is right, as far as it goes; but the alveolar process is cellular bone, and if you have an involvement of the alveolar process you will not relieve that by any pulling of the teeth alone, as you have to remove every bit of that bone just like you would in any other bone surgery. You must remove all of the diseased bone. And, personally, when I see a case that the radiogram shows is of dental origin, a dental engine is indicated, and I feel like it is a dentist's job, and if their dentist is a man that I feel like will do that thoroughly, I say, "Go to your dentist and have that tooth pulled and have all this area that this plate shows removed." Now in chronic cases that is not always sufficient. If the mucous membrane is degenerated and thickened, and you then later on have to go on and do the intra-nasal route, somebody would say, "Why not use the intra-nasal route and be done with it?" You are not done with it, because if you do the intra-nasal operation, a great many cases that we have where we do the intra-nasal route, the Dencke, or the Caldwell-Luc, they keep on draining. Why? It is because the floor of the antrum is necrotic, diseased tissue, and you have also a granulation of the tissue that is secreting, and it is going to continue until you remove all that diseased tissue. If I am wrong on that, I want to be put right. And I feel like, if it is of dental origin, with a diseased alveolar process, if there is a dentist in town that will do it thoroughly and interpret an X-ray picture, have all that floor removed, and later on, if necessary, open it through the nose.

DR. MCKINNEY: There are several points brought out by the various essayists that might

be emphasized, but this is an endless subject. It is almost as endless as the old question which used to be discussed at the Tri-State Medical Society of Mississippi, Arkansas and Tennessee, at its annual meetings in Memphis, as to whether quinine should be used in the treatment of malarial hematuria.

It was some three years ago, I think, that Moure, of Bordeaux, in an article in the *Revue Hebdomadaire d' Laryngologie*, etc., reported a number of fatalities from perforation. The cause of these fatalities seemed to be rather obscure, but there were a number of deaths, death coming very quickly after the forcing of air into the antrum. I mention this to make clear to you that where what would seem to be a harmless procedure, the forcing of pus out of the antrum by means of air compression, is attended with a possibility of a fatality, and it would not be very pleasant to have a patient drop dead in one's office from a procedure apparently so simple as this. As to the etiology of this condition, we know that many of these cases result from an acute catarrhal inflammation of the mucous membrane of the nose, with extension of the inflammation to the mucous membrane lining the accessory cavities. Infection follows, with formation of pus and consequent symptoms. I agree with Dr. Cayce that many cases of empyema of the antrum are due to infection from an abscess at the root of a tooth. We can drain off this pus accumulation through the normal opening, either by irrigation, or by use of a suction apparatus, such as that devised by Coffin. Pus can very readily be withdrawn from the antrum by the insertion of a trocar and canula through the lower nasal wall, irrigation with warm saline solution being practiced through the canula.

The fact that we have so many different operations for frontal sinus suppuration is an indication that no one operation is generally successful. Killian, himself, is reported to be doing his operation much less frequently than formerly, owing to the large number of fatalities that he has had and the unsuccessful cases from the standpoint of cure. Doubtless he has realized that he is as far away from a really successful frontal sinus operation as the rest of us. The simplest operation we can do to get the desired results, of course, is the best, but I must say that it is only in the extreme cases that I would resort to a procedure so radical as that of Killian.

In empyema of the antrum, I believe the operation which has borne the conjoint name of Caldwell-Luc is the best operative procedure to apply in most cases. My own experience has been that I have had many more antrum than frontal sinus operations, and I have been better satisfied with the results in my antrum cases.

Recently I reported to our local society—Memphis Society of Ophthalmology and Oto-Laryngology—a case which emphasizes the value of the radiograph as a guide in operation in these cases. If we have the facilities to get a radiograph we should not operate without this, and it is quite helpful in arriving at a diagnosis. We sometimes have very large sinuses, which, without preliminary radiograph, may be very deceptive to us. I believe that somebody speaking a few minutes ago mentioned a case where on operation the frontal sinus was found so large that they did not know where the probe went. I recall a case in Memphis in which one of our men was operating upon a frontal sinus, and when he got into this he found that it went so far and was so extensive that he was afraid he was going into the brain. In transilluminating the sinus, at times we will observe that the cavities are so large that the translucent area extends clear back into the roots of the hair. The case that I was going to tell you of was that of a woman about middle age, upon whom I operated about three years ago at the Baptist Memorial Hospital, in Memphis, for empyema of one antrum. The case was in a charity ward, and at the time we did not have facilities for getting radiographs of these cases, so I operated without a picture. I did a Caldwell-Luc, and I may say that this was about the worst case that I have ever operated upon. The necrosis was so extensive the bone curetted away without any pressure to speak of whatsoever. The entire antrum was thoroughly curetted, the anterior third of the inferior turbinate removed, and an opening made through the nasal wall for drainage. The external wound was closed in the customary manner. Some three months ago she returned, complaining that she had a recurrence of the previous symptoms. I had a radiograph made and this showed that there was some slender opaque body lying on the floor of the antrum. I then learned that she had received treatment at the hands of a dentist, who had bored up through her alveolar arch, after extracting a tooth, and put a gold tube through the opening for drainage. Evidently this tube had worked its way up into the antrum, and I must have overlooked it at the previous operation, although I had curetted the antrum as thoroughly as I felt justified in doing. At the second operation this tube was removed. I mention this case merely to stress the importance of getting radiographs if possible in our sinus work.

DR. BLUE, Memphis: I wish to emphasize what Dr. McKinney mentions about pumping air in the antrum. A number of deaths are reported in cases of inflation of the antrum. One occurred in Brooklyn some years ago.

I think the Moshier operation is about the

best thing that we have to do in breaking down and exenterating the ethmoid cells.

I also use in diagnosis, as well as in treatment of the sinus cases, the suction. The suction is a very efficient aid to me in locating the pus; after I have cleaned the nose, attach the suction apparatus, and I can frequently pull out the pus and trace it back to the cavity from which it is coming. I use the Brawley apparatus, and let them go to the sink with the running water and draw that pus right out; in a little while it will soon clean the cavities. I use vaccines in some cases with success; others with marked failure. One symptom is dizziness, that has not been mentioned, I have noticed a good many of these sinus cases will present; in some of them a vertigo is very uncomfortable. The transillumination is not always sure. That is, it is all right when you get it dark; but sometimes I have found the sinus being involved where there was not apparently any shadow. I don't rely very strongly on transillumination.

DR. LEVY: I saw the case that Dr. McKinney speaks of, and it is one of the points I insist on, before touching upon the antrum—that is, a picture must be made.

In reference to Dr. Cayce's remark about the teeth, I heartily agree with him there; I won't touch the antrum—I mean in the chronic stage—without first a dentist clears up the teeth complications.

With regard to that, I have a case now that has refused to have the teeth looked after, although the radiograph shows disease around them, and yet it does not extend to the antrum, and also shows a chronic antrum trouble, but I won't operate on her until the teeth have been cared for. I have asked her to see somebody else and get an opinion. But what does she do? She will come up with acute pain and have the antrum washed out. Until it was washed out she was losing weight and gave a septic history. She immediately improved with washing out of the antrum.

Another point that I have a time in getting is the dentists' co-operation with me. They laugh a great deal about the theories that we speak of when we speak of the teeth, both, not as you confine it, in the antrum trouble, but also with regard to that tonsillar trouble that so much trouble comes up about.

Dr. Blue mentioned suction. I am a firm believer in it, and since using the Coffin suction outfit, which I saw in New York, I am getting better results. It has long tubes by which you can go right into the cavity, and it is a much better way of treating the sinuses.

I am not in favor of giving a person adrenalin to spray into the nose. I may have an old idea about it, but I cannot get away from the fact

that when they leave the adrenalin off they are in a worse condition than when they started.

I am just doing some work now with the Holmes pharyngoscope. I am trying to see if I cannot with that make a more proper diagnosis of sphenoidal conditions. So far I have not been very successful in my work in the sphenoidal conditions. By passing it up behind you can see right up into the superior fossa. And yet it is too early for me to make a definite statement about that work.

DR. W. LIKELY SIMPSON, Memphis: I wish to mention one or two points in diagnosis. I think one of the first things we should do is to use transillumination. I depend a great deal on transillumination, of course, in antrums and somewhat in frontals. Then, secondly, I would use irrigation. I think the one who does not use irrigation a great deal overlooks a good many sinuses. Especially is that so of the antrum and frontal. I think we should use the roentgenogram more than we do. Certainly that has given us a great deal of help in making diagnoses.

As to the Cooper operation, which was mentioned, I cannot see where it was ever indicated at all by a rhinologist. I can see where Dr. Cayce is right, if there is a necrosis around the root of the teeth, that one should get rid of that, but do not leave an opening from the mouth at any time into the antrum. Let it heal up as quickly as possible, then, if necessary, irrigate your antrum through the inferior meatus. And I would like to say right here, it seems to me a straight canula is far preferable to the curved.

As to the Lathrop operation, I would like to mention it to say that I have found it very satisfactory. I have not done as many operations by this method as by the Killien, but certainly it seems to me to be much preferred.

DR. CRAWFORD: One of the symptoms that has come up in my work is the question of headaches which are referred to the eye. Those patients will come in and say, "Doctor, I got up this morning with headache, and by ten o'clock my headache was gone." I find that a great many of these cases are suffering with frontal sinus trouble, as they will come to you with a history of getting up in the morning with headaches, up until ten o'clock, say. After they get up and stir around, the pain will disappear. I have advised in a number of cases to remove a part of the turbinated bone, and my custom is to use the adrenalin ointment—allow them to use that, rather than the spray. I have four or five cases now on hand that every few weeks, sometimes two or three months, they will come in and say, "I have a headache this morning," and I use a little cocaine or adrenalin and open up the frontal sinus, and they will say the pain is gone. Very many of these cases will come in

who have been to the optometrist, and they have had their eyes fitted up, and they will come in with a history, and after you relieve that, they will say at once, "My pain is gone." And I remember one of these cases came in to see me just this last month; he was on his way to the optician to have some glasses fitted, and his brother met him and brought him to me. He gave the history as given by me, and on reducing the turbinated bone and administering cocaine and adrenalin, in order to make a thorough diagnosis, he at once said, "I am relieved." This young fellow had some pus and was operated on. Some of these cases you don't get any pus, even when the pain is relieved, and I have attributed it to the fact that you have a blocking up of your sinus and an accumulation of gas and pain from pressure, and an instant relief as soon as the sinus is opened up. And I have one case that has been coming to me for three or four years now; he will not submit to an operation. I told him that the day was coming when he was going to have to have an operation. He said, "As long as you give me relief, I am going to keep coming this way." That man comes in sometimes once a month, two or three visits, the next time maybe four or five visits before I can open it and relieve him; for a time each visit he gets temporary relief; he has pus sometimes and sometimes not a particle of pus; yet in less than two minutes after reducing his turbinated bone and opening up the sinus, he will say the pain is all gone.

I think we are just now waking up to the fact that a great many of our eye troubles are due to sinus troubles and nasal troubles. I remember to have sacrificed an eye a few years ago. It was a case in which Dr. Savage and myself had seen the case, and Dr. Savage and I both had advised enucleation. The man had a bulging eye, the eye turned to the outside. I had examined him; I thought it was a tumor. Dr. Savage had done the same thing. I attempted to go in and remove the tumor, and when I got in there and I opened up an abscess, of course I had to take the eye out. And later it developed that he had polypi and sinus trouble; and I believe if we had gone through the nasal route, it would have relieved and saved that man from losing that eye, and I never think of that fellow but what I have a little sensation of. I wish I hadn't seen him at all. But, nevertheless, that case has been a lesson. A few years ago, just a little before that, or just a little after that, a case was reported in the Academy of Medicine, the late Dr. Atchison reported a somewhat similar case and I, in discussing, advised that the nasal chambers be looked into. He didn't send the case to me, but sent it to Dr. Savage, and Dr. Savage was kind enough to call me up and

say that on my suggestion he had found that the trouble was that the child had an abscess of the sinus, just as I had suggested in this other case, at least suggested in discussing it at that time. So I think you will find that a great many of our eye-strains and headaches that we have heretofore considered were due to the eye, and especially those conditions where the people get up in the morning with eye-strain. No matter what eye-strain an individual has, he should not get up in the morning with headaches; he ought to get up, if at any time at all, with comfort in his eyes; but if he gets up with eye-strain in the morning, you can look immediately for some condition of the nose. The majority of these cases will come in and, say, by ten o'clock all the pain in the head is gone and they are perfectly comfortable until the next morning, when the pain returns. They may or may not have pus in the sinuses.

DR. CHAS. HUFF DAVIS: These headaches, not of ocular origin, that happen with a regularity in the latter part of the morning, are most often due to chronic sinusitis. One of the most favorable diagnostic symptoms was left out, and that is that the patient will call attention to the frequent necessity of blowing his nose. When this necessity arises, sinus headaches begin to diminish in severity, and if mucus or pus is discharged, one can always detect it. The rest I thoroughly endorse.

I am surprised that Dr. Gayce declares that he is by himself, practically, in believing that troubles in the antrum of Highmore are most often due to infection by way of dental origin. You gentlemen have your X-ray plates, or you ought to have them, and in studying them you will find that often the teeth actually intrude into the antrum of Highmore, so that most of my antrum of Highmore treatments have been instituted by the dental route. I have a dentist ream out a hole into the antrum through the nose. I irrigate those holes until I am satisfied at that sitting they are clean. By the way, normal salt solution is one of the best membrane irrigations of which we have any knowledge. My objection to the strictly nasal route in treatment of diseases of the antrum of Highmore is that the drain pipe is, figuratively speaking, in the middle of the column that we wish to drain. To further illustrate, if we wish to drain a bucket of water empty the best way to do it, mechanically, is to open a hole in the bottom of the bucket, instead of the side wall. My observation has been that you will always have a residuum of pus left in the antrum below the nasal exit. For this reason I have been more successful in irrigating from the nose, washing the pus out through the cavity in the mouth.

Dr. Wood got off an observation with relation

to shadows, and I would like for him to repeat it. These shadows are always a means of diagnosis. To my mind, the use of bismuth paste, for diagnostic purposes, should be discontinued. I have had two deaths from frontal sinusitis in the last six months. One, a young girl, whose initial complaint was headache mornings. The headaches grew in intensity and the family physician suggested that they take her out of school. She would always refer the pain to one spot. She had a typical septic temperature, then her eyes began to bulge, and she was sent to Knoxville for an operation. I found that the frontal sinus had been opened by the disease. I did not have much to do to that. Anyhow the case died of cavernous sinus thrombosis. The second case was similar, being the case of a man, aged 30 years, in which both frontal sinuses were involved. Dissection showed a communication from the sinus and ethmoid cells, right straight into the cavernous sinus. I believe there was no use for either of those patients dying.

There are many diagnostic points that are of infinite value and our earliest ambition should be to institute drainage from the sinuses. With the aid of X-ray plates, and the favorable light that frequent blood counts lend, any leukosytosis being always a bad indication, and the play of temperature, showing a systemic infection, these sinuses should be operated on and an insistence should be had that they be operated on.

I will ask Dr. Hogshead to close.

(Editor's Note—Dr. Hogshead's discussion has not been returned to the editor, as is true of some others.)

DR. HILLIARD WOOD (closing): "I don't know that I have anything to say except a word on treatment. The question of dental treatment has come up in connection with the antrum.

That diseased teeth and apical abscesses should be treated by the extraction of teeth, and perhaps by curetting the bone, is possibly not to be denied, but I do feel that any opening between the mouth and the antrum is a misfortune. I think that it is a detriment. Now it may be a necessary misfortune, perhaps, but in any event I regard it as a misfortune. It is my experience that these antrums seldom cease to discharge so long as those openings remain, and the methods of keeping them closed—that is, to keep food and fluid from getting into them from the mouth—are as a rule in my opinion abortive. I regard the openings between the mouth and the antrum, either in the alveolar process or in the canine fossa, as a complication, as an aggravation, and as a cause of chronicity of that discharge, and it has been my rule when seeing these cases after they pass through the hands of the dentists who have left openings between the mouth and the antrum, to get rid of those com-

munications as soon as possible. The quicker you cut off all communication between the mouth and the antrum, I believe, the quicker you get rid of the empyema.

I have nothing further to say.

HERSCHEL EZELL (closing): Mr. President and gentlemen, the principal reason for accepting the invitation to write on this subject was to learn something more than I knew in regard to the treatment of sinus infections, and that I think I have—I know I have—done. There have been a number of good points brought out. Still it seems to me that we are far from the practice of proper treatment of sinus infection. I appreciate the reception of my part of the paper, and hope by the next meeting that we will have made another step forward in the treatment of these cases.

FECAL FISTULAE.*

By George R. West, M.D., F.A.C.S.,
Chattanooga.

Among the complications that are prone to occur in the routine of surgical practice, few are so distressing and at times so difficult to correct as fecal fistula. This surgical condition is dependent upon a variety of etiological factors, including, among others, the results at times following operations upon the abdominal organs, the improper employment of drainage, the results of traumatism, and, in not a few instances, the purposeful establishment of the fistula for the relief of some other more serious or fatal condition.

Far back in the dark ages when the humoral theories obtained, the study of fecal fistula was made the subject of searching inquiry, and to it the designation of "iliac passion" was applied. Through the march of progress the condition has markedly increased, and this is as it should be, for not infrequently it is the wish and the endeavor of the surgeon to stay the onslaught of some pathological condition, that eventually must result in necrosis and perforation of the intestine, and for this purpose he need resort to the formation of an artificial anus, whether temporary or permanent, to sidetrack the

intra-abdominal infection and its products outward through the abdominal parietes, and thus in the majority of cases preventing the infection from taking a more formidable direction.

Fecal fistula may be defined as a communication between any portion of the intestinal tract and the external surface of the body or some hollow internal organ, through which gas or the solid or liquid contents of the intestine escape. In a vast majority of cases the external opening will be found in one of the inguinal or lumbar regions. The pelvic organs through which an outlet is most frequently found are the bladder, uterus and vagina.

Fecal fistulae are **congenital** and **acquired**. The most frequent cause of congenital fecal fistula is imperforate anus, where pressure from accumulated matter at the extremity of the canal produces the symptoms of inflammation, ulceration and perforation with extravasation of the bowel contents. When the obstruction is low down, the fistula may be in communication with perineum, bladder or vagina; higher up, it may open at the umbilicus, or in the linea alba, or even posteriorly near the spine; or a congenital cause may at times be found in the persistence of the omphalo-mesenteric duct or Meckel's diverticulum. Acquired fecal fistula may be **surgical** or **accidental**. Colostomy and enterostomy are examples of the former, while the latter includes wounds, injury of the intestine, intestinal ulceration, intestinal strangulation, the ingestion of some hard or sharp body through the intestinal wall, malignant neoplasms, pelvic and abdominal abscesses, appendicitis, injury of the bowels during an operation, the application of ligatures, catching by sutures, and the employment of a drainage tube or of a simple drain of gauze.

Anatomically, it is usual to divide fecal fistulae into two varieties. In the first variety the perforated bowel has or will become attached to the abdominal parietes or to an adjacent organ over a considerable area, while the affected segment of the intestine remains straight; consequently, the lumen of the intestine is not diminished and the fecal circulation is not impaired. For these rea-

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sions only a small quantity of intestinal contents passes through the fistula. In fistulae of this variety the tract is as a rule of small caliber, and these fistulae often heal without operative interference.

In the second variety, the opening in the bowel is larger, lined with mucous membrane and continuous with the skin. The feces are diverted toward the external opening constantly and with force, rendering the case incurable as long as this condition remains. The contents of the intestine are carried toward the opening by means of a septum or spur, formed by the coats of the bowel at its mesenteric border, which prevents the contents from entering the lower segment. Such a condition is known as artificial anus, and it is often purposely made by the surgeon for the relief of obstruction below, as is instanced in cases of inflamed and strangulated hernia.

The length of the fistulous tract, from the external opening to the intestine, varies from a half inch to eight or nine inches. Its direction is often tortuous and most difficult to trace. This is especially true in cases where the bowel has become bound down to the pelvic floor and the perforation has given rise to a phlegmonous inflammation, the formation of an abscess, and then a fecal fistula. When the perforation is below the ileocecal valve, the discharge consists of fecal matter; if above this point, the discharge is more fluid, devoid of offensive odor, but rather offers the presence of chyle. The condition becomes more serious the higher in the bowel it occurs, because of the grave interferences with digestion, assimilation and nutrition and because of the large portion of bowel thrown out of function. A complete fistula in the upper portion of the jejunum may bring about rapid starvation and death quickly results unless operative measures are at once instituted. By far the greatest number of fecal fistulae are found in the lower part of the ileum, the large intestine, or in both.

Tuberculosis and cancer of the intestine may also be the starting point of a fecal fistula, especially when operated upon under conditions in which drainage is demanded. This complication makes clear the fact that appendicitis is the most common cause of

fecal fistula. This naturally follows from the circumstance that appendicitis is the most common of all intra-abdominal diseases; that in the acute form without operation it is followed by periappendicular abscess; that the abscess walls are made up of loops of intestine bound together, and that suppurating collections, in addition to peculiar toxins and the action of enzymes and modified enzymes, are all-sufficient to weaken, ulcerate and lead to perforation of the bowel. Appendicitis is from the beginning a septic disease and as such it must always be accompanied by suppuration; if the pus so formed discharges freely, as through the appendix as a drainage tube, it is not recognized; if it discharges inadequately, it is recognized as an appendiceal abscess. In the latter instance should the abscess at the time when it is opened be discharging internally, a fecal fistula may result. After opening the appendix abscesses are frequent and in the majority of cases heal spontaneously. Internal fistulae, communicating with the bowel, form a lateral opening in this hollow viscus, so that food products can pass along the bowel and allow the fistula to heal. This will require four or five months. At the end of this time the fistula can be closed, either by a small plastic operation, not always successful, or by a major operation, i.e., opening the peritoneal cavity, closing the fistula, and excising the portion of the bowel affected. This operation is by far the more formidable, but it is to be preferred, as almost invariably leading to a successful result.

In the formative stage of fecal fistula, the symptoms are those of a localizing intra-abdominal irritation—paroxysmal pain, distension, inability to pass flatus freely, if at all, in brief, the cardinal symptoms of intestinal obstruction. There is elevation of the temperature and augmentation of the pulse rate.

As soon as the fistula is established the symptoms at once ameliorate; the elevation of temperature persists, however, for a few days or even longer, and usually is from 101 to 104 degrees, although it may ascend two or three degrees higher than this. This rise is caused by toxic absorption from the wall of the tract. As the fistula assumes a chronic

course, the development of granulations prevents the absorption of the toxins, and either there is a slight febrile disturbance or else this symptom is altogether absent. Tuberculosis fistulae are extremely persistent and repair is most unlikely when an abscess cavity is formed in close proximity to the intestinal opening, due no doubt to a failure of the walls of the abscess to collapse.

As before stated, the location of the fistula is often a determining factor in its effect upon bodily metabolism and nutrition. We have seen how rapidly fatal are fistulae located in the upper part of the jejunum. In making their way to the surface some of these fistulae set up a phlegmonous inflammation, disorganizing the soft tissues of the abdominal wall and draining a suppurating discharge by many channels upon the surface of the integument. The neighboring tissues suffer a marked induration, the whole conglomerate mass offering a splendid medium for the reception of micro-organisms, many of which, elaborating their toxins, set up a chronic toxemia, making the prognosis of ominous import. In other instances the abdominal walls are undermined, drainage is impossible and resort must be made to an operation whereby the discharging sinuses must be freely opened. In no other way can the toxic symptoms be abated; to temporize with this devitalizing process is to invite inevitable catastrophe.

The symptoms indicating the development of fecal fistula are the presence of a peculiar dark, blackish-brown stain upon the dressings and the detection of a distinct and persistent fecal odor. The discharges which are constantly issuing from a fistula produce an intolerable burning sensation; this is especially true of the higher-located ones, where the acrid, "biting" secretions of the pancreas and of the bile produce exquisite suffering upon the already red, tender and excoriated skin, which is always a part of the symptom-complex of fecal fistula. The odor emanating from the fistula and the involuntary escape of gas completely isolates the sufferer, and he and his friends will constantly implore the surgeon for some reme-

dial measure to afford relief and cure the condition.

All too often this annoying condition finds no amelioration, because of meddling interference on the part of the surgeon. When left to nature many of these fistulae heal of themselves, by simply protecting the external opening by a large loose pad of some sterilized absorbent material maintained in place by a bandage. Upon first thought it would appear logical to introduce a drainage tube, or drainage in some other form, to carry off the feces and keep the skin wound patulous. The results of clinical experience at once condemn the procedure, for it is frequently productive of harm, for no drain will carry off the feces as well as the pressure within the intestine. Furthermore, when the fecal matter remains pent up in the sinus, symptoms of sepsis appear. It should never be forgotten that the improper use of drainage tubes after abdominal operations are capable of producing a fecal fistula; and given a fecal fistula, the use of drains too often defeats the very object that we seek to attain. If left to itself the tendency of many a fistula is to contract and eventually obliterate itself; thus the unwisdom of introducing any foreign body, and of the pernicious routine of some surgeons of swabbing, probing and washing the anus in order to keep the part clean. A fistula in the lumbar region is not so prone to heal as is a fistula in the inguinal region or in the groin, probably due to the fact that such a fistula takes origin from the cecum or the ascending colon in its retroperitoneal portion, or from agglutinated portions of the bowel, a circumstance that makes the outlook most unfavorable from any viewpoint.

As before stated the treatment of fistulae, in not a few instances, resolves itself into simple protection of the external opening, renewing the dressing as it becomes contaminated, sustaining bodily nutrition by the usual hygienic measures supplemented by the administration of tonics and of easily digestible food (that leaves but little residue) and the limited use of liquids and liquid foods. Purgatives are interdicted and the bowels are to be kept in a state of solution by the employment

of enemata. As soon as the patient's strength warrants it, he may get up and go about, engaging in his usual vocation if this is not too onerous or does not cause too much strain on the bodily powers: and he may, if he so desire, exercise intelligently in a gymnasium, selecting the lighter forms of calisthenics. Under this simple regime very many cases of fecal fistulae find a spontaneous cure in from a few days to a year. In those cases, however, where the patient's vitality is at low ebb and where the fistulae is in a higher locality, there is great danger from starvation and asthenia and operation becomes at once imperative. Again, operative interference is always demanded in those instances where the sinus becomes covered with epithelium, continuous from the cylindrical epithelium of the musoca to the epithelium of the integument. No one can hope for a spontaneous cure when the gut is constricted below the opening, or where obstruction is caused by the presence of a spur. Nor can one hope for nature to effect a cure when the etiology is to be found in a tuberculous or carcinomatous lesion.

When can one predict that a sinus will heal spontaneously? This allows of no definite answer and depends largely upon the factors in each individual case. A fistulae whose discharge is apparently lessening gives a favorable outlook for a spontaneous cure. A fistulae which is stationary after the interval of a few months is likely to remain permanent, and little or no hope can be entertained for its obliteration by conservative means. Very early operation upon fecal fistulae is as a rule not good surgery, for, in the first place, it deprives them of a chance of spontaneous cure, and secondly, a later operation is more easy of accomplishment, because of the absorption of exudations, infiltrations and adhesions.

It is not my desire at all in a brief exposition such as this, to attempt any outline of treatment of a condition that from its various locations, etiological factors, and pathological processes that may be encountered, make it a protean surgical entity. There are, however, certain definite "golden rules" of surgery that should not be lost sight of. The field of operation is always a filthy, contaminated area. The sinus should be energetically cleaned and when possible the external opening should be clamp-

ed or sutured during the operation. The lines of incision should be carried wide of the infected territory, and should be made with the greatest care, to avoid injury to the bowel, which is almost always adherent to the abdominal wall some distance around the fistulae. Landmarks are invariably lost in the conglomerate mass and the surgeon need "feel" his way in avoiding injury to the bowel or adjacent important structures.

The external opening upon the skin is no guide as to the location of the rent in the bowel, for the connecting sinus is often a narrow and tortuous tract and tracing the course of the fistula is a very difficult and trying part of the operation. If the fistulous opening is not covered with peritoneum, the operation is less likely to be successful. Thus, a fistula of the cecum is much harder to close than one in some part of the small intestine. On the same principle, when it becomes imperative to denude the gut of its peritoneum because of the presence of adhesions, the opening is far more likely to remain closed if it is at all possible to attach an available portion of omentum to the suture line. In such an instance drainage would be demanded, as a protection to the patient's life should the sutures fail to hold. The particular operation best adapted to each and every case depends upon the skill and the wisdom of the operator. In order to preserve the lumen of the bowel, at times, transverse suturing is demanded. When the question of patency is in doubt, entero-enterostomy is often performed so that the caliber of the bowel may be maintained and to relieve tension from the repaired portion of the bowel during the process of healing. Or a resection may be done with an end-to-end anastomosis. At best the mortality in cases of fecal fistulae is all too high; and it behooves the surgeon to be on the constant "*qui vive*" in intra-abdominal affections, to prevent in so far as within his power, the development of this distressing and oftentimes dangerous sequel.

In this brief resume of an all important subject, I have only been able to group together the salient points of fecal fistulae, especially the consideration of those fistulae that discharge upon the surface of the skin. To attempt more than that would be to rewrite

a lengthy chapter from surgical annals of the past half century.

There still remains a word to be said relative to the acquired fecal fistulae, which as previously noted (vide p. 2), was asserted to be surgical or accidental. Accidental fecal fistulae has been sufficiently dwelt upon, and I wish to conclude this paper with a passing thought concerning the condition known as artificial anus,—and while it may occur spontaneously, it is usually purposely created by the surgeon. The opening may be more or less permanent and among the indications for the colostomy are the following: (1) Obstruction of the intestines below, such as from inoperable tumor; or from stricture of the rectum or colon. (2) Congenital malformations of the rectum, whether simple, syphilitic, tuberculous or cancerous, and to prevent the irritating fecal matter passing over the raw, ulcerated bleeding surface. (4) To relieve incurable recto-vesical fistula.

The operation of inguinal colostomy has for its object the interruption of the fecal current absolute physiological rest for the portion of bowel below it—a condition that is not attainable by the older method, i. e., the lumbar operation. If the artificial anus is to be permanent, the bowel which had previously been brought forward in the external incision, is cut through completely, and the cut ends secured to the skin by means of a few sutures. If the direction of the muscles has been regarded in making the abdominal incision, a sphincteric action is obtained that demands the use of a large drainage tube to keep the opening patulous. Should the artificial anus be only a temporary one, the incision in the intestine should be in the longitudinal direction, and when the opening is about to be closed, the drainage tube is removed, after which the bowel retracts and the opening often closes without further treatment.

DISCUSSION.

DR. ROBERT CALDWELL, Nashville: I only wish to emphasize one point that Dr. West made in his paper, and that is the avoidance of meddling surgery in this class of cases. They will practically all heal, as the doctor has indicated, if we let them alone and not meddle with them, and especially do not meddle with them, as the doctor brought

out, by various dressings and applications; simply keep the patient clean and comfortable and let the fistula alone, and you will get results. You will delay healing if you try to medicate and plicate, and so forth, these cases.

One point I would like to mention here with reference to the healing of these cases, and that is, fecal fistula associated with a hernial condition. This is a class of cases we are forced to close; we want to close them frequently on account of the hernial condition, and we are forced to close them because of the fecal fistula. But again let me emphasize the point to let these patients alone and they will get well, and we might carry that a little farther, and especially in our abdominal pus cases I would urge that you do not wash or irrigate them, but keep them clean and let Nature do the rest. She will do it much better than we can.

DR. G. D. LEQUIRE, Grainger: I have had a few cases of fecal fistula in my practice which gave me quite a little trouble, and I want to report one of them which had a sad ending. I should like to report the beginning of it. He rode horseback and thought he had bruised himself about the perineum. He had a large abscess which was lanced and it ran quite a while, ending with a fistula. I think this rising started from a fecal fistula and was the means of opening it through the skin. It went on for about a year, and I treated it as indicated by keeping it clean. However, it did not heal. The surgeon curetted the fistula and got a good result, but five or six months or a year after the operation the patient developed another abscess or rising in the perineum. He called me in to lance it. I opened this abscess which proved to have a good deal of pus in it, and the swelling around the perineum was almost gone in a few days; then the man developed an embolism in the lung and died promptly. I think the relaxation of the swelling around the hemorrhoidal veins released a blood clot which lodged in the end arteries of the lung and cut off his supply of air.

These fecal fistulae are hard to handle; a great many times we do not get satisfactory results with surgery, but when we do not get good results where we treat them for a reasonable length of time, we should refer them to the surgeon.

NON-SPECIFIC MEASURES IN THE TREATMENT OF CERTAIN IN- FECTIONS.*

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Nashville.

It has long been recognized that recovery from an infectious disease was obtained by the

*Read at annual meeting of Tennessee State Medical Association, Nashville, April, 1917.

destruction of the offending organism and its toxin by the natural resistance and immune bodies of the individual. It has also commonly been taught and accepted that these immune or protective substances or anti-bodies were specific only for the causative organism or its products, and could only be produced by the reaction of the human body to the offending organism. Acting on this theory, i. e., that the injection of the causative bacteria would increase the specific anti-bodies—has been the basis of most of the so-called specific vaccine therapy, concerning which the literature of the last decade has had much to say both good and bad. In recent years, however, it has become more and more apparent that certain ill-understood non-specific factors likewise may play an equally important part, and, as a result, our line of attack on certain infections has been opened up—especially in those instances, where owing to questionable etiology, no absolute specific could be hoped for.. Let us consider, then, for a moment the results obtained by first specific and then non-specific measures in certain infections.

As early as 1893 Frankel, (1), reported 57 cases of typhoid fever treated by spontaneous and intra-muscular injections of typhoid vaccines with excellent results. Later, Petruschky (2) in 1902, and Quadronc (3) in 1908 obtained similar results. During the Balkan war in 1913, Petrovitch (4), inoculated subcutaneously 460 cases of typhoid fever with vaccine with a mortality of only 2.9 per cent., while in 220 similar cases, not given the vaccine, 12.8 per cent. died.

Within the past two years or so the mode of attack has changed from the subcutaneous route to the intra-venous one. Ichikawa reports 87 cases treated by the intra-venous injections of sensitized typhoid vaccines with immediate recovery from fever and other symptoms under one or two injections, and with no disturbing incidents other than slight hemorrhage in occasional cases. Biedl (5) reports a series of 21 cases similarly treated with immediate recovery of 17, and 3 deaths—two from uncontrollable epistaxis and one from broncho-pneumonia. Gay also treated a series of typhoid cases with intra-venous injections of a specially sensitized vaccine with favorable results in 68 per cent.

So much for the evidence of specificity,

what now can be produced in support of non-specific measures? In 1893, immediately following Frankel's work with typhoid vaccines, Rumpf obtained similar results in typhoid cases treated with bacillus pyocyaneus vaccine. Kraus obtained excellent results in typhoids treated by intra-venous injections of colon vaccines, and was so impressed with this method that he applied it with success to 8 cases of puerperal sepsis. Within the last few years, Wright—always a firm believer in specificity—has made the following observations: "All who have had much experience with vaccines will have seen cases where the therapeutic effects, lying quite outside the range of the particular vaccine employed, and therefore, as we thought, not quite creditable to science, have been obtained with vaccine therapy."

During the last year and a half, since the work of Jobling and Peterson showing the clinical and experimental value of the injections of non-specific proteins in infections, considerable work has been published in this country in this connection. Miller and Lusk during the past summer treated a series of typhoid cases by the intravenous injections of typhoid vaccines and secondary proteoses—with termination by crisis in 20 per cent. and by rapid lysis in 20 per cent.; no difference was noticed in the result obtained with these substances. Later the same authors reported a series of 85 cases of different types of arthritis, treated by intra-venous injections of typhoid vaccines with the following results: of 45 acute cases, 29 recovered promptly after from one to four injections, 8 were markedly improved, 6 moderately so and 2 not affected; 9 of these cases had recurrences. Of the twelve sub-acute cases, ten cleared up in from 3 to 5 days and the other two were markedly improved. Of 19 chronic cases, 10 showed definite improvement.

Culver reports a series of gonorrhoeal complications, including arthritis, epididymitis, prostatitis, etc., treated with varying substances such as colon vaccine, gonococcal vaccines, meningococci vaccines and secondary proteoses. The results obtained from these different substances were analogous in all respects with nothing to commend one more than the other. In a series of 31 arthritis cases, 28 were either symptomatically cured or markedly improved.

While in 12 cases of acute epididymitis there was complete relief in all from pain after the first injection.

Ziembrowski has reported 100 cases, embracing such conditions as septic war wounds, erysipelas, etc., treated by the intra-muscular injection of 5 c. c.'s of boiled milk with excellent results. Engman reports good results in psoriasis and lupus erythematosum with the intra-venous injection of typhoid vaccine.

In our work we have used intra-venous injections of a 1 per cent. solution of secondary proteoses in the different types of so-called infectious arthritis, gonorrheal epididymitis, and erysipelas. Our method of procedure has been to start with a dosage of from 2 to 4 m.'s of this solution, and give, as a rule, daily increasing amounts in the endeavor to obtain a moderate but definite reaction following each injection. It was found necessary to increase the dosage from day to day since many patients seem to acquire a certain amount of tolerance after several injections, and no definite results were obtained in the absence of a reaction. The reaction produced consisted of a chill beginning in from 20 minutes to one hour after the injection and lasting usually from 15 to 30 minutes. Following the chill there was usually a rise in temperature of from one to four degrees with a subsequent return to normal in from 6 to 12 hours. Associated with these symptoms there is usually a general bodily aching, headache, and, in a few instances, vomiting, though this latter symptom scarcely occurred in any patient except those who disobeyed instructions and ate too soon before or after the injection. In no instance in our series did we observe any alarming symptoms, but were frequently struck with the fact that even where a rise in temperature of several degrees was obtained, there was little or no acceleration of the pulse or other danger signs.

However, we feel that routine thoroughness must be observed in investigating every case before treatment is begun to determine whether the general state of health of the patient is such as to justify his being subjected to the reaction described. In our work we have avoided the very young, the very old, all cardiac cases with marked endocardial or myocardial disease, and nephritics with hypertension.

It is likewise to be urged that the initial

dose—either proteose or vaccine—should be small, as the tolerance to such substances varies with each individual case, and, especially is this true of cases which may at previous times have received injections of vaccines or sera, serving to sensitize them to foreign proteids and render them more susceptible to anaphylactic phenomena. In our work we saw no evidences of this, but Culver reports mild transient anaphylaxis in two patients who had previously received subcutaneous injections of gonorrheal vaccines.

Work of this kind is certainly better and more safely carried out in well equipped hospitals, where the patient may be under constant, competent observation than in private homes. Especially is this true in severer types of infections such as typhoid, pneumonia and erysipelas. In these conditions, where the patient is usually desperately ill, a re-action of any great severity is not at all devoid of danger, so that the problem for the future, to render such procedure safe for general use, must be the attainment of the same results with less re-action—possibly by the use of much larger intra-venous dosage instead of the present cautious intra-venous one.

Of our series of 24 joint conditions, 5 were acute, 6 sub-acute, and 13 chronic. Of the acute cases, 2 were definite cases of acute rheumatic fever—one of these a child of 12 years with multiple, swollen, tender joints, fever, acid sweats, etc., cleared up entirely within 24 hours after a single injection; while the other, an adult female with multiple involvement, temperature, etc., was entirely relieved after 8 injections except for some residual pain in one shoulder. The other three acute cases—all gonorrheal joints—received an average of 8 injections with moderate improvement in two instances and only mild temporary relief of the third.

The 6 sub-acute cases received an average of 6 injections with complete relief of all symptoms and a return of the involved joints to normal in every respect.

In 13 cases of chronic arthritis there were varying degrees of disability from slight stiffness in the milder cases up to complete ankylosis of the majority of the bones of the body in the most severe case. The injections given these patients, averaged in number from 2 to

18, with an average of 7 treatments per patient. The results obtained were—complete subjective relief in five, marked improvement in five, and a noticeable change in three.

In the above series the focus of infection was distributed as follows: The tonsils in 9, the teeth in 8, gonorrhoeal infection in 4, while in 4, even after a careful search no focus was found, or else the probable focus had already been eradicated before the patient reported for treatment. In no instance where the focus was discovered was it removed until after the injections had been given, in order that there might be no confusion between the effects of the treatment and the removal of the focus.

Ten cases of gonorrhoeal epididymitis were treated. Of this number 8 showed acute swelling, tenderness, fever, urethral discharge and varying amounts of pus in both the first and second glass specimens. In all of these cases there was immediate improvement following the first injection—the epididymis becoming smaller, softer and less tender—and, after an average of 4 injections, there was complete relief, as evidenced by the return of the epididymis to its normal size and consistency together with the disappearance of the urethral discharge and the pus in the urine. The two remaining cases were of long standing with chronic, hardened, and enlarged epididymitis, and only mild improvement was attained following treatment, largely due to the fact, we believe, that no definite re-action was obtained following injection.

Of the four cases of erysipelas—two were seen on the second day of the disease, and two on the fourth day. The two early cases were promptly aborted after one injection—the temperature promptly falling to normal and the inflammatory condition of the skin rapidly fading. Of the two late cases, one cleared up entirely after 3 injections, while the other ran the ordinary clinical course in spite of 5 treatments.

In reviewing work of this kind, the question naturally arises as to how such non-specific substances produce their beneficial results. From the standpoint of our present knowledge it is impossible to answer definitely and absolutely this question, but to only bring before you certain factors which have been observed both clinically and experimentally.

During the first hour following such injections, there is a decrease in leucocytes—often as low as 2000 per c. m. This leucopenia is followed by a gradual rise to varying degrees of leucocytosis—from 10,000 to 50,000 or higher—reaching its height in from 6 to 10 hours and subsiding again to normal within 24 hours. As to how much influence the increase in white cells may have it is hard to say, and also to determine in what way, if any, the white cells act—whether by their phagocytic property or through their contained ferment leuko-proteose.

It has been suggested by certain observers that the hyper-pyrexia may play a part, since it has long been a well-known fact that certain conditions such as sub-acute arthritis, diabetes, neuralgia, etc., are often benefited by intercurrent febrile conditions.

It is also well established that organisms, such as gonococcus, are quite susceptible to elevations in temperature—Boerner and Santos having shown by the use of a diathermic apparatus that gonococci in the urethra are killed if subjected for 10 hours to 102.2, or in 6 hours if subjected to 104 degrees; but, it hardly seems probable that the moderate amount of temperature elevation accompanying the ordinary reaction would exert any harmful influence on organisms such as streptococcus, pneumococcus, or typhoid bacillus—organisms, which are frequently seen clinically, associated with considerable degrees of temperature, and, upon which temperature seems to exert but little influence in curtailing the disease.

In the early days of their work Jobling and Peterson advanced the idea that the non-specific substance, by its stimulation of the hemopoietic system, produced a mobilization of the existing anti-bodies such as agglutinins, bacterio-lysins, etc., and that recovery was possible through a medium of these. But their subsequent work, both clinical and experimental, coupled with the observations of other investigators, has shown that this phenomenon is by no means a constant occurrence, and that its role, if any, in this connection is of minor importance.

Jobling and Peterson have also shown that in experimental animals there is almost invariably a marked increase in body ferments—pro-

tease and lipase—following the injection of such substances as dead bacteria, and protein split products. In the clinical work on the sera of patients under treatment the same results have been found, though not to the same degree nor with the same regularity. It is generally admitted that the serum trypsin or protease has little or no effect on bacteria, but if we admit the present day contention that the toxemia of infectious diseases is due to toxic protein split products, derived from bacteria, then one can readily see how an increase of the existing body trypsin may be of value in more rapidly and completely hydrolyzing these toxic protein split products to lower and less toxic forms. In this way, following the re-action the body may free itself of the existing toxemia, and show temporary subjective improvement, while the disease process and its causative organism might continue its activity to cause future harm. Certainly a picture of this kind, i. e., greatly increased subjective well being, is not at all rare clinically in this line of treatment, even where the general trend of the disease is not halted.

The value of the increase in the existing lipase or fat splitting ferment is at present problematical, but since the surface of most bacteria is supposed to be lipoid by nature or a mixture of lipoid and protein material, it seems more than probable that ferments of this nature will be necessary for their destruction.

Following non-specific injections of the kind outlined above, the anti-ferment index of the blood is at first reduced for a short time to be followed later by a rise; while the serum of the patient has shown an increase in viscosity with a fair degree of regularity.

Since medicine offers us so few specifics and none of these in every instance absolute, it has seemed to us that an attack along the line of that outlined above is more than justified. It is not intended, however, to suggest that non-specific remedies will prove a cure-all in any or all such infections, nor that their use should embody our entire attack. It cannot be stressed too strongly that, in treating cases of infectious arthritis, the focus of infection must be as diligently sought and thoroughly removed as ever, in order that the infection to be combated may be limited to that already absorbed. Likewise, the results to be

hoped for and obtained must of necessity vary somewhat with the individual case. Naturally we cannot expect in the chronic cases of arthritis with ankylosis—either bony or fibrous—to restore the joint to normal, but only at best to offer subjective relief to our patient and to prevent further organic change. This method of approach seems to us especially applicable to that unfortunate class of arthritides—seen at times by us all—who, after the removal of all possible foci of infection, continue to be progressive, leaving the patient doomed to the more or less continuous use of salicylates and with the prospect of joints becoming more and more crippled as time goes on. From our short series of cases we are led to believe that the most favorable results will be attained in cases of acute rheumatic fever and the types of sub-acute and chronic infectious arthritis in which too much organic change—in the nature of ankylosis—has not occurred; while, as a class, real acute gonorrhoeal joints associated with fever, heat, and swelling will result less favorably. As to how permanent such results will be we cannot at present state, as a large per cent. of our series were hospital cases, which we have been unable to follow since their discharge.

In regard to cases of epididymitis, though in most instances there was prompt subjective relief and return of the part to normal, together with the disappearance of the discharge and pus in the urine, we are entirely unprepared to claim that in these cases the causative infection has been destroyed, since gonorrhoea is too prone to recur even where apparently clinically cured at times. We do feel, however, that the procedure outlined above is of value, since it affords in most instances prompt subjective relief to the patient, shortens the period of disability and hastens the return of the part to normal. The more acute the symptoms as to duration and physical findings, the better the results.

In conclusion I wish to call your attention to the fact that, though in all our cases we have used a secondary protease—a mid-product of protein digestion—it is our belief that the results obtained are entirely non-specific in nature and would have followed a similar use of any foreign protein not too toxic in nature.

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DISCUSSION.

DR. JAMES W. JOBLING, Nashville: During the past three or four years our ideas concerning the use of vaccines in the treatment of infections have undergone marked changes. You will probably remember that modern vaccine therapy is based to a large degree upon the work of Sir Almuth Wright, who observed that bacteria treated with normal serum were phagocyted more readily than those treated with normal saline solution. He termed the substance having this action opsonins. Wright believed that the cure of certain local infections was due to an increase of the opsonins; he, therefore, based his vaccine therapy upon the so-called opsonic index. Wright concluded that vaccines were indicated only in those conditions where the organisms were localized, and he believed that their entrance into the blood stream was sufficient to stimulate the production of opsonins without the necessity of using vaccines.

In all of Wright's work the necessity of autogenous vaccines were emphasized. It was thought that recovery in this type of infection was due to specific opsonins, and that they could be produced in the largest amounts with autogenous vaccines. That opsonins may be an important factor in the recovery from certain infections is not doubted, but clinical experience does not con-

firm the belief that autogenous vaccines are essential; just as good results have been obtained with stock vaccines and with other substances not derived from bacteria. No doubt many of you gentlemen have observed the influence of intercurrent infections on other diseases.

In 1893, Frankel reported that he obtained excellent results in the treatment of typhoid fever with subcutaneous injections of typhoid vaccines, and numerous investigators have recently reported similar results with non-specific substances in the treatment of general infections of various kinds. It will be seen that Wright's theories are not now tenable.

In 1909, Ichikawa began using intravenous injections of typhoid vaccines in the treatment of typhoid fever, and he found that a comparatively small dose of a typhoid vaccine injected into the veins of patients with typhoid fever caused the disease to terminate by crisis in the majority of cases. Following the injection there was a chill associated with an elevation of temperature. The temperature soon dropped to normal, however, and the patients felt better. He then found that paratyphoid fever patients responded in a similar manner. These results have been confirmed by a number of investigators, and it is now recognized that intravenous injections of vaccines can cause distinct amelioration of various kinds of general infections, sometimes a recovery by crisis.

Petersen and I have been studying this subject for the past four or five years, and we have found that several other substances will act in a manner similar to bacterial vaccines. The changes found in the serum are those mentioned by Dr. Manier. In view of some recent work it is probable that the serum changes are secondary in character so far as final recovery is concerned. The results obtained in these experiments, and in their application to diseases of human beings, suggests that we are dealing with phenomena very similar to those observed in anaphylaxis. You will probably remember that animals inoculated with a particular protein, horse serum, for instance, become so hypersensitive to that particular protein that a second dose given fifteen or twenty days later will almost certainly result in their death. Somewhat similar results have been noted in human beings. You have probably read of patients who have suddenly collapsed and died within a few minutes following a second dose of diphtheria antitoxin. This is a state of hypersensitiveness to a particular kind of a protein. While a sufficiently large amount of the protein given at the second dose will kill the guinea pig or human being, a small dose will render them immune for a short time. We believe that a somewhat similar explanation applies to the results which we are getting today with these non-specific agents.

Typhoid fever patients with a large number of bacilli in their blood frequently show an amelioration of all their symptoms after such injections without a disappearance of the bacteremia. This shows that the infecting organisms are not destroyed by the treatment, but that the cells are made more resistant to their toxic products. In other words, a desensitization, or an increased resistance of the cells of the body to the action of the toxin, is produced.

There is another phenomenon that occurs—the chill. I will not discuss this at present because I do not feel that we have a satisfactory explanation for it. I believe, however, that it corresponds to the disappearance of the toxin from the circulating blood.

We feel that we are just in the beginning of a new stage of therapy for the various infections. It is not claimed that this method of treatment is going to cure all cases of infection. No intelligent physician expects to cure all of his diphtheria patients with diphtheria antitoxin, but he does expect to relieve the great majority of them. This treatment will be applicable to two classes of cases—first, to those diseases the causative agents of which are unknown, and, second, to those in which the infecting organisms are known, but for the treatment of which we have no efficient antisera.

We have been using in our work secondary proteoses. This substance, as you know, represents one of the stages in the digestion of proteins. We have found that the primary proteoses are comparatively toxic, while the secondary proteoses are not. For this reason we have used the relatively non-toxic secondary proteoses. In our experiments with these secondary proteoses we found that intravenous injections into animals produce changes in the serum similar to those caused by the intravenous injections of bacterial vaccines.

I believe that our work, as well as that of others, has shown the futility of recommending or insisting upon the use of autogenous vaccines. I think that it has been demonstrated conclusively that autogenous vaccines are not necessary. Any vaccine given in doses sufficiently large to produce a good reaction will give results as favorable as those afforded with any specific vaccine.

Of course, no non-specific substance can take the place of vaccines as prophylactic measures. Nothing can take the place of typhoid vaccines in immunizing against typhoid fever, but when the patient has developed the disease other agents may be used as therapeutic measures.

DR. I. G. DUNCAN, Memphis: I have had quite a little experience with the use of vaccines, and I must say I have to disagree with the gentlemen about injecting them. I always make it

a rule to use stock vaccines first, and then, if I do not get results, I have an autogenous vaccine made. I have had quite a few cases where the stock vaccines have failed absolutely. If you have an autogenous vaccine made and use it, it will sometimes clear up the condition very rapidly. I have had several cases of chronic gonorrhoea that ran on for a long time, and in these cases I believe in giving doses large enough to do some good. I give two or three times as much of the vaccine as the authorities recommend; I always give it until I get a strong local reaction, as well as a general reaction. I have had several cases where the stock vaccine seems to do very little or no good at all, and after using an autogenous vaccine the cases would clear up like magic.

I want to insist that we try to find out what germ is producing the trouble and give that particular vaccine. If we do that, we will get much better results from vaccine therapy.

DR. R. L. MOTLEY, Dyersburg: I am mighty glad to have heard this paper and the discussion of Dr. Jobling, because the modern trend of immunology is changing so rapidly just now that we hardly know where we are. Jobling and Petersen, in the Vanderbilt laboratory in the last few years, have tried to show that Ehrlich's side chain theory of immunity is obsolete and an out-of-date theory. They have put the theory of immunity on the basis of enzymes and have considered it more of a physio-chemical proposition than a biologic one.

In a recent epidemic of anterior poliomyelitis one worker tried the use of convalescent serum intraspinally injected, taken from convalescent poliomyelitis cases. He obtained good results with that, and in the use of controls tried normal human serum and also normal horse serum. He found in those cases where he used normal serum he got as good results as he did by using convalescent serum, showing it was not a matter of antibodies in the serum he was using, but was more of a general reaction, a general protein reaction, and the chief changes observed in the spinal fluid were an increase in leukocytes.

As far as the clinical course of the disease ran, he got as adequate results in using normal serum as in using convalescent serum.

In treating gonorrhoeal cases, you cannot get much benefit from any kind of vaccine therapy. This is particularly so in cases of acute gonorrhoea. At least, I have not been able to obtain good results. In the chronic gonorrhoeal case, with its complications, almost any foreign protein injected subcutaneously or intravenously will produce the same results. I find my results in the use of that depends upon the severity of the reaction you get up to a certain extent. The more severe the general reaction, the better the re-

sults. The reaction which takes place is in the nature of anaphylactic shock. You do not want to produce any serious shock, but a chill, general malaise, aching in the joints is always an indication that you are getting some results from the vaccine. One worker has tried using 10 c. c. of boiled milk injected into the gluteal muscles and claims good results from that; in fact, as good results as from gonococcus vaccine.

I have tried typhoid vaccine in gonorrhoeal epididymitis and orchitis, and in chronic urethritis you can get almost as good results with the typhoid vaccine as with the gonococcus vaccine. The subject of immunity is bound to have some specific aspects. What it is, I do not know, and I have not been able to find out because we can not get away from the fact that typhoid vaccine will immunize against typhoid fever. No other foreign protein will immunize, but the question of immunity is in a chaotic state right now and seems to be put on a physical basis or a physiochemical basis rather than on a biological one. The different phenomena, your specific Wassermann, for instance, when first brought out, was supposed to be a specific reaction. Now, it is shown to be in the class of general reactions or group reactions, and you can get the same reaction with different conditions or diseases in the Wassermann.

However, until the non-specific protein factor in infectious diseases is put upon a firmer theoretical and working basis by the research workers, I think we are justified in using, as nearly as possible, specific vaccines and other antigens in our immunologic therapy.

DR. MANIER (closing): Our experience with vaccines has been similar to that of Dr. Motley in that we have noticed no particular effect from them. However, the type of cases where we have used non-specific measures in the last year or two has been acute epididymitis, and it has been our observation that the more acute the epididymitis in point of physical findings and duration of symptoms, the better the results we obtain by that treatment.

In reply to Dr. Duncan's plea for specificity, Dr. Jobling brought out in his discussion that we do not mean that non-specific substances should be used in a prophylactic sense. I do not think so at all. I think the vaccines of typhoid in a prophylactic way against typhoid must be used, but he thinks we ought to know what we are using. When we use an ordinary stock vaccine from the drug store we do not know what we are using any more than we do when we inject secondary proteose. The main objection to the use of autogenous vaccines is that you put the patient to unnecessary expense and it is prohibited to a certain class of patients, and the work of Rosenow, showing changes that occur in bacteria and their properties in the course of cul-

tivation, takes away a good deal of the theoretical value of autogenous vaccines.

CHRONIC INDURATIVE PANCREATITIS. PANCREATECTOMY.—PRESENTA- TION OF SPECIMEN.*

By Wm. Britt Burns, M.D.,
Memphis.

This specimen I am presenting today is one that has been in my possession since July 1, 1910, and removed by operation from one Davis, age 40, who was a hold-over and was inherited by me when I came on the service on that date at the Memphis City Hospital. Davis had been operated upon for gall-bladder disease or gall-stones some weeks before, and was drained. He had not obtained relief of symptoms. The writer made a conjectural diagnosis of chronic pancreatitis and did an exploratory operation. In coming down to the site of the gall-bladder it was found that this organ had been removed, and there were few loose adhesions. A mass was lying across the abdomen when the stomach was pulled up, which stood up and out perceptibly, and on palpation was found to be as hard as wood or bone. I remember remarking to my assistants, "This thing is as hard as wood." This was determined to be the pancreas, and upon the extreme density of the organ the diagnosis was changed from the chronic pancreatitis to that of malignancy—possibly scirrus.

The patient's age, a fair degree of emaciation, and the general facies were not entirely incompatible with such a diagnosis. The absence of fat-necrosis, hemorrhagic areas and abscess eliminated from the consideration acute and subacute pancreatitis. Accordingly a pancreatectomy was decided upon.

The gastro-colic route was chosen to gain access to the gland. Great difficulty was encountered in delivering the gland for the purpose of applying clamps and ligatures. And in the process of manipulation some of its contents were evidently squeezed out and

*Read at annual meeting of Tennessee State Medical Association, Nashville, April, 1917. 911.

the density of the organ was somewhat lessened. When this was noticed, the head and body, nearly all of the tail of the pancreas had been cut loose, it was decided that this part of the tail of the gland might be left in situ, for the advantage that might be derived from the remaining islets of Langerhan's and their internal secretion.

Here I again waived in my diagnosis and wondered if the diagnosis of chronic (indurative) pancreatitis was not, after all, the probably correct one. The specimen was misplaced and overlooked and a pathologic report was never had, and just recently it was submitted to Dr. Herbert Brooks, who rendered a verbal report of a general fibrosis.

The ducts and blood supply were tied off with medium braided pedicle silk and the cut end of the tail of the pancreas was closed with mattress sutures on a broken needle of the same material. A Mikulicz drain was placed in the bottom of operative field and brought out through the incision in the abdominal wall, which was in the median line.

The patient made a rapid recovery and put on weight, and to all intents and purposes appeared as well as any other successful and satisfactory abdominal operation. He left the hospital in about thirty days in good condition to resume his occupation as a laborer, and I have not seen or heard of him since.

Now what are some of the points of interest and lessons that may be learned from an experience of this kind?

In an operative procedure such as the one under discussion, how shall one interpret induration—woody hardness?

Let us review cancer, the effect of steapsin on the structures of the pancreas, chronic induration pancreatitis, and chronic circumscribed pancreatitis.

"Cancer is the most important and frequent of the new formations of the pancreas; in the light of our present knowledge it is perhaps to be considered the most common disease of the pancreas. The view is undoubtedly correct, though at present not capable of proof, that certain affections of the pancreas, as diseases of the blood vessels, circulatory disturbances, inflammations, catarrhal processes in the excretory ducts, atrophy,

fatty degeneration, tuberculosis, etc., occur much more frequently than has been recognized on account of defective investigations.

"The relative frequency of cancer to other diseases of the pancreas is probably about the same as in other organs, in which cancer certainly does not assume the highest statistical importance. Carcinomata are more rarely overlooked than other affections which perhaps are recognizable only on microscopic examination, which is generally omitted."

"The only statistics are of little value, in consequence of the chronic inflammation having been confused with scirrhus."

"Remo Segrev collected the cases of pancreatic tumor in the Ospedale maggiore in Milan during nineteen years, and found 32 cases in 11,500 autopsies in the Vienna General Hospital—1,270 carcinomata, 22 pancreatic carcinomata; 5,065 autopsies in Weidener Hospital, 415 carcinomata; 6 pancreatic carcinomata; 477 autopsies in Rudolph's Hospital, 221 carcinomata, 1 pancreatic carcinomata. Therefore, among 23,611 autopsies there were 2,005 cancers, of which 29 were in the pancreas. Thus we have 8.5% of cancers, of which 1.5% were pancreatic cancers."

"The primary cancer of the pancreas is certainly much rarer than the secondary variety, but primary carcinoma of the pancreas is by no means a very rare disease. Friedriech collected only 15 cases. In statistics published in 1893 by Mirallie, 113 cases of the primary carcinoma of the pancreas are reported. He eliminated all cases from consideration in which a cancer was found at the same time in any other organ, since it would render doubtful the primary origin of the tumor; he excluded also those cases in which he was unable to get any detailed account. It may certainly be assumed that among the cases excluded by Mirallie there were some which were primary, for metastases after primary carcinomata of the pancreas are by no means infrequent. Up to 1896 six additional primary cancers of the pancreas had been added. Vienna General Hospital shows from 1885 to 1895 thirty-two cases of primary cancer. From the beginning of 1896 to July,

1897, thirteen cases of primary cancer of the pancreas are shown in the literature."

Seat of Neoplasm: "The head of the gland is the most frequent seat of the neoplasm—(Ancelet)—22 cases collected without discriminating between the primary and secondary forms."

"Among 73 cases of primary and secondary cancer of the pancreas collected by Biach the head was affected 19 times, the body 13 times, and the whole gland 31 times."

Mirallie writes: "In general, the head of the pancreas is the seat of the disease."

The Vienna General Hospital reports: "Among 32 cases of the primary carcinoma it was found in the head in 20 cases, twice in the body, three times in the tail, and once in the entire gland."

Cancer of the Body of Pancreas.

Leriche reports three cases of his own and collected sixteen from the French literature.

Finney collected sixteen cases of the primary tumor of the pancreas. He also did practically a total pancreatectomy when he removed a benign cystadenoma, where there was just a little normal granular tissue at the head and tail.

Kellerman reports 131 cases of carcinoma; of these 75 were men and 46 were women.

The causative factors of cancer here as elsewhere are entirely hypothetic—unknown.

But if, as is said by the Professor Leopold Oser of Vienna, *Nothnagel Encycy.*, "Carcinoma is the most important and frequent of the new formations of the pancreas;" and in the light of our present knowledge "it is perhaps to be considered the most common disease of the pancreas;" and then if one remembers the palpable density of the fibrous cancer, one may without much more thinking arrive at a diagnosis of cancer.

The Effect of Steapsin Upon the Structures Of the Pancreas.

Murphy says under date of December 8, 1915, *Clinics*, Vol. V., No. 3: "Examination, however, is more suggestive than the history—across the abdomen there is a mass of infiltration which is as hard as wood, as though malignant. Acute infection of the pancreas

liberates steapsin, and this fat-splitting ferment gives rise to a wood-like induration which stimulates carcinoma. The diagnosis in this case is not cholelithiasis, therefore, but pancreatitis, or a neoplasm which is producing the obstruction to the bile-duets and giving rise to jaundice." Murphy's operation on the case was primarily exploratory. This particular phase of chemico-pathology is peculiar to Murphy and was not hitherto recorded, so far as I know. It would, admittedly, have been of great assistance as a diagnostic aid in the case of the writer.

Chronic Indurative Pancreatitis.

There are two groups of this condition, namely:

Chronic indurative pancreatitis originating from the blood vessels (hematogenous variety) and chronic indurative pancreatitis originating from the excretory ducts.

Chronic indurative pancreatitis originating from the Blood Vessels: (a) Indurative Pancreatitis, due to endarteritis obliterans. The blood vessels of the pancreas are very frequently affected in the arteriosclerotic and endarteritic processes taking place throughout the body "generally."

Hyperplasia of the connective tissue occur and the usual secondary changes, such as fatty degeneration, hemorrhage and atrophy, follow.

According to Hoffe-Seyler: "The blood vessels first become diseased, their walls thicken, their lumen narrowed or obstructed. In consequence there are disturbances of nutrition in the parts supplied by them, notably thickening of the connective tissue around the gland acini and degeneration and disappearance of the gland cells. The interacinous fat tissue increases in proportion to the disappearance of gland tissue; indeed, it becomes so excessive that the pancreas is reduced almost to a mass of fat which may be larger than the normal pancreas.

(b) Chronic indurative pancreatitis from syphilis.—An increased growth of connective tissue occurs very frequently in syphilis.

This is especially found in the congenital variety. Most of the cases are reported from the literature of syphilis in infancy and

childhood. The pancreas in some cases is twice the normal size, white and shiny, firm in consistence, and the structure almost or entirely gone.

Microscopically the "interstitial tissue was found so greatly increased that the acini appeared to have entirely disappeared, and the organ seemed rather an actual fibroid than a gland." The conditions obtain in a very much smaller way in the adult.

(d) Chronic Indurative Pancreatitis from alcohol.—Hyperplasia of the stroma of the pancreas is quite as possible from chronic alcoholism as it is in the liver and kidney, and needs no further discussion here.

Chronic indurative pancreatitis, originating from the excretory ducts.—(a) From inflammation of the excretory ducts (sialangitis pancreatica).

This variety may be more frequent and has the same etiology as the acute (suppurative) inflammation. It may develop in connection with any process which favors the immigration of micro-organisms, especially with cholelithiasis and cancer.

In this connection Riedel says, "There is a severe inflammatory process in the head of the pancreas which leads to the formation of a large tumor; an enlargement of iron-like density develops in a suspicious spot," etc. This may last for months and years.

(b) From closure of the excretory duct.—Obstruction of the excretory duct from any cause produces enlargement of the ducts in the gland and destruction of the gland cells and a consequent hardening of the interstitial tissue of the organ. Pawlow tied the duct of Wirsung in rabbits. The histological picture runs like this: "The cells of the tubules are diminished in size, and interstitial decrease of connective tissue occurs, beginning in the greatly dilated ducts and extending between the tubules, gradually assuming extreme proportions and causing the destruction of a portion of the secreting parenchyma," etc. "A similar process occurs in man after closure of the ductus Wirsungianus."

Chronic Circumscribed Indurative Pancreatitis.

The condition is described as a local affec-

tion of the pancreas, secondary in time and cause and due to extrinsic influences, such as ulcer of the stomach or duodenum or other inflammatory process in the neighborhood of the organ.

We see from the foregoing that there are several and varied causes of induration of the organ under discussion, any one of which might lead one astray.

How shall one **treat** these conditions?

Cancer: Pancreatectomy; partial pancreatectomy. Nothing short of complete removal of the cancerous tissue will avail; the approach to the pancreas is one of too serious import to do palliative work. The first total extirpation of the pancreas was undertaken and accomplished by Francke; his patient living five months.

Frequent operations for partial pancreatectomy, removal of the tail and part or all of the body, have been successfully done. Even part of the head of the pancreas has been removed with relief of symptoms and cure. The objection to the total extirpation of the gland is the fear and danger of limiting or cutting off the blood supply to certain neighboring organs. For instance, in this procedure, the gastroduodenalis artery would be cut, a gangrene of duodenum would supervene. Therefore one purposing to do the operation of complete removal of the pancreas must undertake at the same time a resection of the duodenum or the so-called pancreateoduodenectomy. This operation has been performed several times; how successfully deponent sayeth not. We are also to avoid injury to the superior portal vein; injury to the superior mesenteric vessels, which is followed by gangrene of the small intestine; and injury of the right colic artery, which is followed by gangrene of part of the colon. The operation of my old friend and college associate, Coffey of Portland, Oregon, is apparently ideal. This author and operator has also improvised an ingenious operation for disposal of the stump of the pancreas in partial pancreatectomy in his pancreato-enterostomy.

Induration from Steapsin.

Murphy drained his case by cholecystostomy.

Chronic Indurative Pancreatitis.

Drainage by cholecystotomy or cholecystenterostomy.—This is especially indicated where gall-stones in the gall-bladder or biliary tract are antecedent and are the cause of the chronic pancreatitis. Where no stones are present, and the etiologic exciting factors are outside of the biliary tract, a more permanent drainage is demanded and a cholecystenterostomy is probably the operation of choice.

In those cases where an earlier cholecystectomy has been done, serious difficulty is encountered where it is desired to drain for chronic pancreatitis. Mayo has found it necessary to do a secondary drainage of the common duct.

If the purview of this contribution touched upon acute pancreatitis, we would have seen that pancreatic leakage is not the deleterious factor it has been thought to be, and that normal pancreatic juice is inactive, being alone.

When pancreatic juice is **activated**, as by associated ferments, from the bile or from the duodenal mucous membrane-enterokinase; from the latter trypsinogen is converted into trypsin. When these agents get into the pancreas, enzymes are given off and fat necrosis occurs.

The pancreas is injured many, many times without the occurrence of fat necrosis. Therefore the pancreatic leakage without fat necrosis, in my case, is further evidence that if these activating influences may be avoided, surgery of the pancreas is freed of one of its greatest objections and becomes a more inviting field.

THE CYSTOSCOPE IN THE DIAGNOSIS AND TREATMENT OF DISEASE OF THE URINARY TRACT.*

By John E. Hall, M.D.,
Nashville.

Of all instruments used by the urologist in the diagnosis and treatment of diseases of

*Read at annual meeting of Tennessee State Medical Association, Nashville, April, 1917.

the genito-urinary tract, there is none so indispensable as is the cystoscope. Deprived of its use, one is reduced to subjective symptoms, which, at best, are totally unreliable in arriving at a diagnosis.

For over a century attempts have been made to perfect an instrument which, on being introduced through the urethra into the bladder, would illuminate it sufficiently to permit a visual examination of its interior. These attempts were unsuccessful until the year 1876, when Nitze devised an electric cystoscope which he demonstrated to the profession in 1877. This instrument, which was of the indirect type, was illuminated by an incandescent platinum loop, kept cool by a continuous stream of water playing over the end of the cystoscope, reducing the temperature sufficiently to prevent serious burns from occurring. Since this time numerous modifications and improvements have been made in the various types of both the direct and indirect instruments, until at the present time they have been perfected to such a degree that their manipulation has become a simple matter and every urologist is familiar with their use. This knowledge, however, is not acquired by reading text-books describing the technique of handling the cystoscope, but by actual practice in the examination of numerous cases. The first essential in gaining this knowledge is to learn the anatomy and characteristic appearance of the interior of the normal bladder as to the location and relations of the interureteral ridges, ureteral orifices, sphincter, trigone and bladder walls.

The reason why beginners become discouraged in the use of the cystoscope is that they are unfamiliar with the appearance and location of these anatomical points, and on introducing the instrument they have little or no idea where to look, or what to look for, and are unable to interpret what they see. They do not know how far into the bladder the instrument is to be inserted in order to find the ureteral orifices, nor are they able to distinguish the interureteral ridges, which are the guides in finding the ureteral openings. After blindly groping about in the bladder and causing more or less unnecessary pain and trauma, they decide that cystoscopy is

an exceedingly difficult task and usually quit in disgust. To one who knows the normal appearance and landmarks of the bladder, a thorough cystoscopic examination of its interior is not at all difficult, and as for ureteral catheterization, it is one of the easiest things one is called upon to do. Catheterization of both ureters requires but a few minutes, except in rare conditions.

In surgical diseases of the kidney we are enabled to make an accurate diagnosis by ureteral catheterization and examination of the urine obtained from each kidney separately. This determines whether the involvement is unilateral or bilateral, and also the character of the infecting organism. When the disease is unilateral and nephrectomy indicated, we are able to say definitely, by means of the renal functional test and examination of urine obtained by direct catheterization of the ureters, whether the other kidney will be able to perform the function of both. This precludes the possibility of removal of one kidney and having the patient die on account of the other kidney being diseased and unable to perform the extra work thrown upon it. It also saves us from doing an unnecessary nephrotomy, or nephrectomy, in cases where the subjective symptoms might mislead us into believing the condition warranted it. It may also prevent us from removing an only kidney, the other being congenitally absent or functionally dead, due to some pathological change in the kidney itself, or resulting from an impacted ureteral calculus, producing complete anuria and atrophy of the organ.

In nephritis, pyelo-nephritis and pyelitis, pelvic lavage is indicated, as it establishes free drainage and washes the pus and cellular debris from the kidney, thereby assisting nature to overcome the infection. These conditions yield very rapidly to this form of treatment. The urine which was at first loaded with pus and pyogenic bacteria, after one or two lavages shows a great diminution in both the number of pus cells and bacteria.

Ureteral catheterization by means of the wax-tipped catheter enables us to diagnose a renal calculus on occasions where the X-ray fails to reveal the presence of the stone. In

this connection, Hugh Cabot calls attention to the fact that in renal calculi too much dependence should not be placed in the X-ray findings, as in about 15% of these cases the X-ray fails to detect the stone, even in the hands of expert radiologists. This failure of the X-ray applies to vesical as well as renal calculi. Beer reported a series of twenty-two cases of vesical calculi which were radiographed. In this series only six showed in the findings, whereas they were demonstrated in every case by the cystoscope. These radiograms were taken by experienced radiographers, so that the high percentage of negative findings could not be attributed to faulty technique. Hyman reports a series of thirty-five cases of vesical calculi radiographed by expert technicians in which re-examinations were made in all negative cases, and they repeatedly gave negative findings. The X-ray was positive in 16 and negative in 19 cases, or in over 52%. All of these cases, with two exceptions, were diagnosed by cystoscopic examinations, and in these two cases the instrument could not be introduced on account of prostatic hypertrophy. These stones, which did not show, varied in size from a marble to a hen's egg. Obesity was not a cause for the negative findings, as large stones failed to show in thin individuals.

In ureteral conditions—such as kinking, strictures, or obstruction due to an impacted calculus—the location of the trouble and perhaps the cause may be determined by use of the ureteral catheter.

In bladder disturbances, where the subjective symptoms are obscure and the diagnosis in doubt, a cystoscopic examination eliminates the possibility of error by showing the exact condition.

The examination of the bladder is begun at the internal sphincter. Here we note any ulcerative or inflammatory process which may be present. The condition of this muscle as to tonicity is determined, as a relaxation permitting cystoscopic examination of the posterior urethra and verumontanum is an early symptom indicative of disease of the central nervous system, as in tabes. The trigone is then inspected carefully, noting any

inflammatory conditions which may exist; if foreign bodies or calculi show; or neoplasms present themselves, this being a favorite region for them; if present, their number, size, location and character; and while we are unable to say definitely, by inspection alone, whether a tumor is benign or malignant, we may at least arrive at a probable conclusion as to its character, as well as at a decision as to the form of treatment to be instituted. If prostatic hypertrophy exists, as shown by the bulging of the lobes into the bladder, or trabeculae and diverticulae appear, as these indicate hypertrophy of the muscular walls, resulting from increased tension, due to urinary obstruction. The ureteral orifices are next examined to see if both are present, secreting normally, and the character of the urine coming from each orifice. Should ulcerations show around the mouth of the ureter, we would suspect tuberculosis of the corresponding kidney.

As to treatment of bladder conditions by means of the cystoscope: By far the most important condition is the fulguration treatment of tumors, by means of the high frequency current. This treatment was introduced by Edwin Beer in 1910, who stated that it was only applicable to those of benign type. Since, however, many cases classed by pathologists as malignant have been reported cured by this method. This treatment is given through a catheterizing cystoscope, using specially insulated wires introduced through the catheter channels of the instrument.

The operating cystoscope permits us to crush calculi, remove foreign bodies, excise and remove pieces of tumors for diagnostic purposes, cut and dilate constricted ureteral orifices, grasp and remove an impacted calculus from the ureteral mouth, etc.

Conclusions.

The cystoscope is indispensable in the diagnosis and treatment of diseases of the upper urinary tract. Without its use, one is unable to determine the extent and character of the involvement in diseased conditions of the kidneys, ureters and bladder. Operations upon the kidney should never be performed

until one has ascertained the true nature of the suspected condition; that the other kidney exists, and will be able to perform the extra work which may be thrown upon it. This can only be determined by means of the cystoscope.

Diagnosis of renal calculi may be made by means of the wax-tipped catheter on occasions where the X-ray fails to reveal their presence.

Vesical calculi may be diagnosed in practically every case by means of the cystoscope, whereas the X-ray fails to establish the diagnosis in a large percentage of cases.

In case of tumors, we are able to determine their number, size, location and character of the growth, and in a large percentage of cases to formulate an idea as to whether they are benign or malignant. From their appearance and extent of involvement of the adjacent tissues, we are able to decide as to whether a radical operation or the fulguration treatment is indicated.

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THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn.

AUGUST, 1917**EDITORIALS****TALK.**

There's pleasure in it; there's profit in it; there's misery in it; there's irremediable harm in it—this thing of talk. An hour may be made to pass pleasantly and swiftly; much helpful information may be gathered and much may be passed on. One may be made to feel guilty and ashamed or injured and outraged though innocent and, it may be, defenseless; another's reputation may be blackened unjustly and without reason—by talk.

It may bring the flush of pleasure, the pallor of fear, or the blush of shame to the cheek of the listener; it may carry a tribute of praise, a measure of trouble or an unjust condemnation for one who is absent—may talk.

Talk is cheap and abundantly plentiful, though it may produce results attended with fearful cost. It has seemed of late that the kind of talk which hurts rather than helps has been more plentiful than ever before. Such talk is that which is born of personal dislikes, often without reasonable basis; of lack of information or of misinformation founded on talk; of hastily drawn conclusions which mature deliberation would have made impossible; of suspicions which investigation would dissipate; of pure downright meanness. There's no help for him who indulges in this last sort, but the others can help themselves and help others by withholding from talk which might hurt and hurt unjustly.

Clean talk, thoughtful talk, careful talk, talk based on facts and with the wish to help and be helped is a mighty force for good. Filthy talk, thoughtless talk, careless talk, talk based on talk and with the wish to hurt or without such wish is a mighty power for evil.

Talk to the man against whom you hold a grievance—not about him. A personal talk

with your supposed enemy may reveal to you a worthy friend.

Talk not at all when you know not what you are talking about, but listen. If you are hearing the right sort of talk, you may learn something worth while. And if you are a fool you have a far better chance of not being found out if you keep quiet.

Talk when you can give some one pleasure. Don't hold your bouquets until funeral time.

Talk when you can tell others something that will be helpful. Give your associates the benefit of what you know you know.

And if you can't talk without saying something mean, directly or by inference, about another, for the Lord's sake dry up and stay dried up!

LOSSES IN 1917.

The counties named below have lost members this year as compared with 1916, the rolls of the two years having been compared on July 15, 1917. Losses are here shown for each county named: Anderson, 3; Bedford, 5; Bradley, 1; Coffee, 2; Campbell, 8; Carroll, 5; Chester, 4; Cumberland, 2; Dyer, 5; Fayette, 8; Gibson, 3; Greene, 4; Grundy, 1; Hamilton, 2; Hardeman, 3; Henderson, 2; Jackson, 5; Jefferson, 1; Knox, 10; Lincoln, 2; Loudon, 8; Maury, 6; Montgomery, 1; Morgan, 4; McMinn, 12; McNairy, 3; Overton, 2; Putnam, 6; Rhea, 3; Robertson, 10; Sevier, 4; Sullivan-Carter-Johnson, 9; Tipton, 2; White, 4; Wayne, 6.

EXAMINED FOR M. R. C.

The names of Tennessee physicians examined to determine their fitness for receiving commissions in the Medical Reserve Corps since the issuance of the last Journal are given in the list below. If other names should have been included we shall be glad to publish them next month:

Dr. Robt. Pillow, Jr., Columbia.
 Dr. J. B. Wright, Elkton.
 Dr. M. E. Connell, Nashville.
 Dr. W. T. Baugh, Elkton.
 Dr. T. B. Collins, Trezevant.
 Dr. G. C. Williamson, Nashville.
 Dr. F. O. Stone, Maynardsville.

Dr. E. S. Stewart, Summertown.
 Dr. R. M. Little, Clarksville.
 Dr. B. T. Nolen, Franklin.
 Dr. J. O. Walker, Franklin.
 Dr. J. J. Frey, Nashville.
 Dr. Dabney Minor, Cleveland.
 Dr. L. M. Lanier, Nashville.
 Dr. W. A. Bell, Cloverdale.
 Dr. B. E. Noblett, Fayetteville.
 Dr. Herbert Acuff, Knoxville.
 Dr. C. C. Sullivan, Nashville.
 Dr. J. M. C. Atchley, Newport.
 Dr. H. A. P. Harris, London.
 Dr. Leon L. Meyer, Memphis.
 Dr. John J. Shea, Memphis.
 Dr. Louis Levy, Memphis.
 Dr. Robin F. Mason, Memphis.
 Dr. W. T. Swink, Memphis.
 Dr. Clarence H. Glover, Memphis.
 Dr. Roy Granberry, Memphis.
 Dr. Edwin W. Cocks, Bolivar, Tenn.
 Dr. Lonnie O. Wilkerson, Stanton, Tenn.
 Dr. Leslie T. Bolton, Lucy, Tenn.
 Dr. Edwin C. Gillespie, Memphis.
 Dr. Grover Carter, Memphis.
 Dr. Charles K. Summers, Memphis.
 Dr. Thomas C. Chapman, Brownsville, Tenn.
 Dr. James P. Owens, Memphis.
 Dr. Thomas F. Coughlin, Jr., Memphis.
 Dr. Charles A. Bender, Memphis.
 Dr. Leonard A. Crosby, Memphis.
 Dr. John W. Oursler, Humboldt, Tenn.
 Dr. John P. Henry, Memphis.
 Dr. Frank W. Smythe, Memphis.
 Dr. Charles T. Richardson, Memphis.
 Dr. Bernard C. McMahon, Memphis.
 Dr. John W. Frost, Fruitland, Tenn.
 Dr. Willis S. Alexander, Ridgeley, Tenn.
 Dr. Charles C. King, Memphis.
 Dr. William Veabey Pruett, Brownsville,
 Tenn.
 Dr. James S. Fleming, Memphis.
 William C. Sain, Bolivar, Tenn.
 Dr. Dorsey B. Granberry, colored, Jackson,
 Tenn.
 Dr. Jas. Pope, Newbern.
 None of these men were examined by Capt.
 Cooper.

COLORED PHYSICIANS.

Dr. L. E. Welker, Nashville.
 Dr. C. M. Gloster, Nashville.

A POST GRADUATE SCHOOL FOR PUBLIC HEALTH NURSES.

The Bulletin of the Kentucky Board of Tuberculosis Commissioners announces the establishment of a Post Graduate School for Public Health Nurses. This is a step in the right direction and it is to be hoped that a large number of trained nurses will, in time, take advantage of the opportunity thus offered them to fit themselves for work in a field which is sure to be developed in the South. The course of instruction, as we understand, is designed to prepare nurses more especially for work in rural and semi-rural districts. This is wise. Any who have studied the public health problems of the South can but have been impressed with the great need for the work of trained visiting nurses among the people in the country. The public health problems of the South are those of the rural South. The successful fight against tuberculosis in the South is going to be made with the visiting nurse as the main factor in carrying it on; infant mortality in the South is going to be reduced to a marked degree only when an agency which shall employ the visiting nurse as its main arm shall have carried the proper instruction into the rural home; disease due to improperly chosen and improperly prepared food is going to be lessened when the trained visiting nurse is put to work in the rural homes of the South.

Dr. W. L. Heizer, Secretary of the Kentucky Tuberculosis Commission, Frankfort, Ky., is general director of the School for Nurses and can furnish any desired information about the school.

POOR DEVIL!

The fellow in official position is a poor devil. Everybody thinks he's a devil, and if he has been in his place long he is absolutely certain to be poor. He has lots to contend with, day after day, night after night, week after week, month after month, and year after year if his first year don't wind up his little barn of yarn.

He is always looked upon as a "politician," and nearly everybody has an idea that he draws a princely salary. He has it said to him, more than once—many times in fact,

that he is considered a "politician" and that his brethren over the State think that he draws a fine salary and has nothing much to do. The facts are that he never took five minutes' active interest in any sort of politics in his life, has never had a salary large enough to keep him easy in mind from one month's end to another, and has worked like "hell a-beatin' tanbark", but mighty few believe any of this. Poor devil!

He is sure to be quoted, requoted and misquoted, most often misquoted. The newspaper reporters talk to him in the most casual way and he finds a bunch of misstatements in the next paper accredited to him. It does no good for him to make denial and correction—nobody ever reads the paper in which this appears. Poor devil!

Some fellow who wants to get ahead of some other fellow comes to him and tells him half the truth, gets his statement on that basis and then goes out and tells the world that he said this, that, and the other. Then the other fellow and several thousand of his friends come and want to know what the — he means, breathe dire threats and leave still believing him a horse thief and liar. Poor devil!

He gets letters from fellows who "tell on" other fellows and wind up their letters—"Don't mention my name in this"! Poor devil!

He is blamed for other folks' mistakes and everlastingly rawhided for his own, no matter what extenuating circumstances may have existed, and his attempts at rectification are many times received with a sneer. Poor devil!

But worse than all, he gets anonymous letters about himself and other fellows. He doesn't pay much attention to those about himself, but it makes him mighty sore to receive one containing statements which are absolutely untrue about some good man who, at his very worst, is a million times better than any writer of an anonymous letter ever was at his very best. We heard once of a fellow who was so mean that he would steal rotten fodder from a blind sheep, and we really consider that fellow some mean; but compared to the anonymous letter writer we would call the fodder thief an holy angel.

The anonymous letter is not an infrequent parcel in the mail of a man in official position. Poor devil!

He is pestered by the advertiser and the self seeker whose one idea in life is to keep himself in the limelight and who would march to preferment over the destroyed hopes of women and the blackened characters of far better men if it were thought necessary for him to do that to "get to the top." Poor devil!

He sometimes comes to the point where he feels that what he has to go through and the place to which he feels must necessarily go when he comes to the end of the span in this life will entitle him to have on his tombstone—as an appeal to pity of men and as an indication of his future residence—the epitaph "Poor devil"!

But! When he thinks of the privilege that has been his to serve his fellows and the public to the best of his ability; when he thinks of the noble friends who have encouraged, supported, helped and fought for him and with him; when he sees his work that they have aided him to do coming to count for something worth while—then he's willing to be a poor devil!

ADEQUATE RANK AND AUTHORITY FOR ARMY MEDICAL OFFICERS.

Under the above caption a strong editorial, following others on the same subject, appears in the Journal of the A. M. A., under date of July 28, 1917. The Journal of the Indiana Medical Association and, perhaps, other medical periodicals have also taken up the fight for better rank and more authority in purely medical affairs for the army doctors. Surely the medical officer knows better than a purely military man how best to provide for sick and wounded men and how best to apply measures for safeguarding the health of the troops. This being so, why should the medical staff, the ranking members of which are, generally speaking, not higher than majors, be compelled to defer to the opinions of majors, colonels, or even generals in matters effecting the care of the wounded and the application of sanitary measures for the protection of the health of the men in camp and on the line? And why

should medical officers, than whom none other have heavier responsibilities and more important duties, be outranked by officers of every other arm of the service?

The Army has *one* general—the Surgeon General. He's a good one, alright, but there ought to be more like him—and there would be more like him in the army if proper recognition of such men were provided for in the organization of the medical corps. And even the Surgeon General is not given the recognition which his ability and the importance of his position warrant. Get the report of the Secretary of War, or that of the Secretary of the Navy and see where and how in those reports the work of the medical corps is discussed. There's a war college, but the Surgeon General is not a member.

The greater number of medical officers, of course, must have the lower rank, but this certainly should not be lower than the importance of their work naturally entitles them to hold. The man who is to direct the work for the protection of the army health, without which there can be no army, should be in position to order things done and should not be made to wait upon and bow to the orders of others who do not know. If the army doctor is to be held responsible for the health of the troops, then give him authority to do and to have done what he knows he should do and have done.

FROM THE DIRECTOR OF THE CENSUS.

Dear Doctor:

The Bureau of the Census is planning to prepare and publish a monograph on the Mortality from Tuberculosis covering the calendar year 1918. To make this work of greater value an endeavor is being made to obtain the co-operation of all physicians to the extent of carefully recording or supervising the statements of occupations upon the death certificates during that year. Circular letters to this effect have been sent to all the physicians in the United States and a few words along the same line in your Journal would, I feel sure, be of great benefit and would be deeply appreciated by this Bureau.

The following extracts from the circular letter might well be published in your Journal to serve as the text for any additional comment:

More accurate and definite statements of the occupations of decedents should be written upon death certificates. Until this is done mortality statistics by occupations will continue to be unsatisfactory.

The Bureau of the Census is planning for the near future a monograph on tuberculosis. How much more valuable this monograph will be if it is possible to show accurately the occupations of decedents.

As a physician you appreciate the importance of such statistics. As a physician you are by education better qualified than the ordinary informant to understand a proper statement of occupation.

Will you not, therefore, take pains to see that the occupation items upon each one of your death certificates are properly supplied?

Thanking you for your co-operation, I am,

Very truly yours,

SAM L. ROGERS, Director.

DECISION IN NURSE-ANAESTHETIST CASE.

The Kentucky Court of Appeals has overruled the lower court in the case of Dr. Louis Frank, Louisville, and Miss Margaret Hatfield, nurse, vs. the Kentucky State Board of Health. The lower court having held that a nurse could not administer an anaesthetic unless possessed of a certificate for practicing medicine, the case was appealed. The higher court reversed the decision of the trial court and held that "giving the medicine prescribed by the physician in charge, who diagnosed the case and directed the time and manner and character of the medicine to be administered" is not practicing medicine.

And so we are where we were in this matter, except for the added advantage that the surgeon and nurse-anaesthetist have in a high court decision behind them.

EXAMINERS FOR TUBERCULOSIS AT CAMPS.

Physicians who are not physically able to undergo the trials of the regular service in the Army will be accepted, upon satisfactorily passing examination, as examiners in the various camps where especial effort will be made

to discover tuberculosis recruits. The physical examination of physicians applying for this particular assignment will be less rigid than in the case of those who propose to enter for the regular service. A history of tuberculosis will not be ground for rejection, provided the applicant is in fairly good condition when he presents himself for examination. Major Lucius E. Burch, M. R. C., Nashville, and Major Frank D. Smythe, M. R. C., Memphis, will examine those who wish to apply for this service. Assignments may be temporary—three months—or may be for an indefinite term. Thus physicians who are incapacitated for hard service are offered opportunity for giving most important aid in fitting out our Army with the right kind of soldiers.

NAMES REPORTED IN JULY.

The names of the following members were reported by County Secretaries during July and have been added to the membership roll of the Tennessee State Medical Association: J. R. Sisk, General Hospital, Madison, Wis.; J. B. McGhee, 224 1-2 E. Main st., Chattanooga; G. R. Walker, 202 N. Dodds Ave., Chattanooga; N. J. Minter, Volunteer State Bldg., Chattanooga; S. H. Barrett, City Hall, Chattanooga; G. P. Haymore, 602 Georgia Ave., Chattanooga; J. H. St. John, 707 Walnut st., Chattanooga; Henry G. Smith, Cedar Grove, N. J.; J. W. Warren, Forked Deer; P. A. Tinsley, Dandridge; J. I. Huggins, Dandridge; J. H. Walker, White Pine; L. F. Ferguson, Gates; R. A. Range, R. F. D. Elizabethton; E. W. Tipton, Kingsport; C. P. Edwards, Kingsport; F. W. Poindexter, Kingsport; G. C. Horne, R. F. D., Jonesboro; W. R. Eddelman, Leiper's Fork; G. A. Jones, R. F. D., Jackson; C. A. Chaffee, Beech Bluff; S. Burrus, Gov't. Hospital 25, Panama Canal Zone; J. E. George, Rockwood; T. L. Bowers, Rockwood; G. F. St. John, Harriman; W. G. Alford, Florida and Triggs sts., Memphis.

On July 15th the total number of members enrolled was 1511, just 24 short of the number on the same date in 1916. This is not as it should be, and we hope that our county secretaries and our members generally will make every effort to bring all eligible men into membership. The Association must grow

and must not be allowed to lose ground by losing members.

FROM MEMPHIS.

Major Isaae H. Jones, M. O. R. C., of Philadelphia, visited Memphis July 23d and 24th, as a representative of the Surgeon General's office to standardize the work of the Examining Unit for the Aviation section, S. O. R. C., with special reference to the Baranay tests. The unit is in charge of Dr. E. C. Ellett, M. O. R. C., and Drs. L. W. Haskell, Robert Fagin, Percy Wood and R. H. Miller, civilian consultants. Dr. Shea has special charge of the Baranay tests.

Dr. Louis Levy, M. O. R. C., of Memphis, has gone to Philadelphia for special instructions, preparatory to assuming duty as Baranay teacher with examining unit for the Aviation Section, S. O. R. C. This is field work and will necessitate Dr. Levy's absence for an indefinite period.

The Hospital unit of the Memphis General Hospital, Hospital Unit "P", has completed its organization and equipment and is ready for duty. The director is Major Battle Malone, M. O. R. C. The medical personnel is as follows:

- Capt. J. L. McGehee.
- Capt. W. T. Swink.
- Lieut. A. F. Cooper.
- Lieut. S. E. Frierson.
- Lieut. J. J. Hobson.
- Lieut. E. L. Anderson.
- Lieut. T. N. Coppedge.
- Lieut. S. N. Brinson.
- Lieut. Kinsey Buck.
- Lieut. Robin Mason.

The unit also comprises twenty nurses. Miss Myrtle Archer, at present head nurse at the Baptist Hospital, as head nurse, and fifty orderlies. The unit was equipped through the generosity of a local mercantile firm, Malone and Hyde.

Drs. E. C. Ellett and Battle Malone, appeared before the medical societies in Haywood, Lauderdale and Tipton counties at July

meetings in the interest of the Medical Reserve Corps.

Drs. Frank D. Smythe and Lee Stone addressed the Dyer County Medical Society at the July meeting with a view of securing additional applications for the M. R. C. Dr. Stone also appeared before the Gibson and Obion County Societies.

Major Battle Malone, M. O. R. C., Memphis, has been visiting Ft. Oglethorpe for observations preliminary to active service with the Memphis Hospital Unit.

The following members of the Memphis and Shelby County Medical Society have applied for commissions in the M. O. R. C. and most of them have received their commissions. A few have failed on the physical examination. Several have entered the regular army and navy.

E. L. Anderson	R. N. Snowden
C. D. Allen	J. B. Stanford
S. E. Frierson	W. T. Swink
A. F. Cooper	M. G. Spingarn
T. N. Coppedge	J. J. Shea
W. A. Carnes	B. L. Schoolfield
B. N. Dunnivant	E. G. Thompson
E. C. Ellett	R. B. Underwood
J. P. Owens	C. F. Venn
P. A. Perkins	Chas. Blasingame
A. R. Porter, Jr.	W. H. Baldwin
A. W. Rudisill	C. M. Beck
L. A. Stone	S. N. Brinson
Hubert Sage	S. L. Baccellato
J. H. Smith	K. M. Buck
F. D. Smythe	L. L. Keller
W. G. Somerville	Louis Levy
Howard Walker	Battle Malone
G. L. Brown	R. F. Mason
W. F. Clary	L. L. Meyer
Joe Francis	E. C. Mitchell
J. J. Hobson	J. L. Morgan
T. H. Ingram	F. T. Mitchell
J. L. Jelks	B. F. Norwood
J. E. Johnson	E. D. Watkins
Max Kaplan	

This list is about one-fourth of the total membership of the Society and is a record of service for which the Society may justly feel some pride.

The following Memphis doctors are in training of Fort Oglethorpe:

W. A. Carnes	E. D. Watkins
--------------	---------------

A. R. Porter, Jr.
R. G. Underwood
J. L. Morgan

Howard Walker
Lee A. Stone
M. G. Spingarn

WANTED.

An energetic young physician as assistant in general practice. Good salary and everything furnished. Address DR. J. B. SHOUN, Hampton, Tenn.

NOTES AND COMMENT

Dr. J. J. Frey, Nashville, now has his offices on the second floor of the Jackson building.

Dr. R. R. Sellers, Erwin, has been ordered to report for duty with the Medical Corps of the Army.

Our old friend "Doe" has "jined" the Army, but most of him have been or will be sent home.

Dr. G. H. Reams, Winchester, Lieutenant in the M. R. C., is now at the Army Medical School in Washington.

Cussed if you do—eussed if you don't. That's what happens to you when you are on most any old committee.

Dr. S. H. Long, Chattanooga, Lieutenant in the Medical Reserve Corps, is now on duty at the training camp at Fort Oglethorpe.

Dr. Edwin D. Watkins, Memphis, Lieutenant in the Medical Reserve Corps, has been ordered to report for duty at Fort Oglethorpe.

Dr. Sam S. Moody, of Shelbyville, has gone to the training camp at Fort Sam Houston, Texas, having been commissioned Lieutenant M. R. C.

Dr. R. H. Miller, Memphis, has moved his offices from 606-607 Bank of Commerce and Trust Building, to 1007-1011 of the same building.

Dr. M. G. Spingarn, Memphis, has been commissioned First Lieutenant, M. R. C., and ordered to the training camp for officers at Ft. Oglethorpe.

Dr. M. L. Shelby, Woodlawn, Lieutenant in the Medical Reserve Corps, has been ordered to report to the Army Medical School for special instruction.

Drs. Duncan Eve, Sr., and W. D. Haggard, of Nashville, were speakers at the meeting of the Chattanooga Academy of Medicine on the evening of July 13th.

Dr. T. V. Woodring, Nashville, Lieutenant in the Medical Reserve Corps, has been ordered to Charleston for duty in connection with the examination of enlisted men.

If every tub would stand on its own bottom, there would be fewer "busted" tubs. If there were not so many "busted", more tubs would stand on their own bottoms.

Dr. Paul Edgar McNabb, Knoxville, Lieutenant in the Medical Reserve Corps, has been ordered to the Army Medical School at Washington for special instruction.

Dr. J. A. Witherspoon, Nashville; Dr. C. P. Fox, Greeneville, and Dr. F. M. McRee, Union City, are the medical members of the District Exemption Boards for Tennessee.

Dr. J. M. Trout, of Knoxville, formerly Major in charge of Hospital Corps, Tennessee State Guard, has been ordered to the Army Medical School for special instructions.

The name of Dr. Lee A. Stone, Memphis, should have appeared in the list published last month of those examined for the Medical Reserve Corps. We are informed that Dr. Stone has received his commission.

The Journal would like to give you all the "dope", but it's hard to get any at all. And if we could get it, it would be all wrong by the time we could get it to you. This war business

so far is "all on the q. t." No one knows what's to be done until it's done did. And then it's likely to be undone.

We see from the newspapers that the Henry County Medical Society met at Paris on July 16th, with fifteen members present, and that the Campbell County Medical Society met at LaFollette on July 19th.

Drs. L. B. Marshall, Wm. E. Bryan, H. W. Harris, and Jesse B. Naive, all from Tennessee, have been recommended to the President by Secretary Daniels for positions as Assistant Surgeons in the Navy.

Dr. G. A. Hatcher, Assistant Superintendent of the Central Hospital for the Insane, and Dr. E. W. Cocke, Assistant Superintendent of the Western Hospital, are studying in the larger Eastern hospitals and clinics.

Dr. Jas. W. McClaran, Jackson, has been commissioned First Lieutenant in the Medical Corps of the Army. Dr. McClaran has already had a year's service in France, and this will make him a valuable addition to the Army Medical Corps.

Drs. Battle Malone, Major, and E. C. Ellett, Captain, in the Medical Reserve Corps, U. S. A., appeared before the Lauderdale County Medical Society at its meeting on July 10th, and presented the needs of the Army for more surgeons.

A recent statement in a Nashville paper, credited to the editor of this Journal, to the effect that all public health officials are exempt from army service was a mis-statement. We never said it, neither do all such officials want exemption.

After eight years' service as Superintendent of the Nashville City Hospital, Dr. W. M. McCabe resigned this position on July 9th. Under the administration of Dr. McCabe the City Hospital had its capacity greatly enlarged and its service extended and improved, while the general records of the in-

stitution were such as to compare most favorably with the best of hospitals of its kind. Dr. McCabe is a member of the Vanderbilt Unit of the Red Cross, with which he expects to be called into active service in the near future.

Dr. W. D. Haggard, Nashville, Major in the Medical Reserve Corps, U. S. A., is now serving in the office of the Surgeon-General at Washington in the capacity of Surgical Adviser to the Surgeon-General of the Army. This assignment is for one month, after which, we are informed, Maj. Haggard will be succeeded by Dr. Oeshner, the famous Chicago surgeon. Major Stuart McGuire, of Richmond, preceded Maj. Haggard in the assignment, and he, in turn, was preceded by Dr. W. J. Mayo. These gentlemen and others who will be called upon later will work with the Surgeon-General in formulating the policies of the Medical Department of the Army, standardizing surgical procedures, the selection and assignment of the personnel and in the consideration and solution of the many problems which will present themselves.

SOCIETY PROCEEDINGS

RUTHERFORD COUNTY.

The Rutherford County Medical Society had their annual outing at the fair grounds near Murfreesboro on July 4th. A number of invited guests were present, among them Drs. O. N. Bryan and E. M. Sanders, of Nashville, who contributed to the scientific program. The members of the society came with their families and their baskets and had an old-fashioned good time together. This annual outing has come to be a feature which is looked forward to with great pleasure each year and has undoubtedly done a great deal to help make the society a stronger and better organization. The Rutherford County Society now has twenty-seven members enrolled and has come to be one of the strong organizations of the State Medical Association.

BLOUNT COUNTY.

The Blount County Medical Society is hold-

ing a meeting each month with a large representation of the profession present at each session.

The Society met on the 11th inst. with Dr. S. S. Kittrell in the chair and Dr. F. A. Zoller, recording secretary.

Under the number "Clinical Reports" in the order of business, several pellagra cases were reported. And as this disease has become quite an epidemic here at this particular time, it proved a subject for animated discussions.

Dr. E. L. Ellis read a paper on "Puerperal Eclampsia."

It was announced that several of our members were ready to do their "bit" for Uncle Sam, and accordingly have filed their applications with the War Department.

F. A. ZOLLER, M. D.,
Rec. Sec'y.

RESOLUTIONS OF CAMPBELL COUNTY MEDICAL SOCIETY.

We, the members of the Campbell County Medical Society, at a called meeting in the City of LaFollette, Tenn., July 19th, 1917, urge, as a patriotic duty, that all physicians residing in this county tender their services to our Government at once, and would especially insist that all physicians in the county at once fill out the blank applications which have been, or will be received from the War Department; also the card accompanying the application, and forward to the War Department as requested.

This we feel as loyal members of our profession is a privilege as well as a duty to show our willingness to serve our country in this hour of peril and necessity.

Resolved, That a copy of this resolution be furnished each of our county papers and to the State Medical Journal and the American Medical Journal, and a copy forwarded to the War Department.

L. M. SCOTT,
G. B. BROWN,
F. A. McCLINTOCK,

Committee.

Attest:--

W. R. IRISH, Secretary.

MISCELLANEOUS

THE LUTIN TEST.

Confirmatory of previous investigations, H. N. Cole and H. V. Parysek finds that some non-syphilitics respond positively to the luetin test and that in those non-syphilitics who do not respond spontaneously the reaction can generally be provoked by iodides. They also demonstrated that the reaction may be provoked by potassium nitrate and potassium bromide. Proving that the potassium ion in the potassium iodide and bromide was not concerned in the reaction, they found that the luetin test may be provoked by sodium bromide, sodium iodide and calcium bromide. —Journal A. M. A., April 14, 1917, p. 1089.

HYPODERMIC MEDICATION.

Hypodermic medication usually means emergency medication. When the occasion for it arrives, the physician, if he is to employ a tablet solution, is fortunate if he has tablets upon which he can depend. The failure of the tablet is his failure—he cannot shift the burden of responsibility. And tablets for hypodermic use, to be reliable, must possess a number of important qualifications. They must be true to label; they must be active; they must contain a definite amount of medicament; they must be soluble.

These thoughts were vividly impressed upon the mind of the writer upon the occasion of a recent visit to the hypodermic-tablet department of Parke, Davis & Co. Here we see hypodermic-tablet manufacture reduced to a science. Here we find tablet-making facilities that exist probably nowhere else in the world. The equipment is complete to the last degree. The department is spacious, light, airy, clean. It is supervised by an expert who has specialized for years in this branch of manufacturing pharmacy and who has selected his assistants with discrimination.

In the manufacture of Parke, Davis & Co.'s hypodermic-tablets the components of the various formulas are weighed and reweighed, checked and rechecked by two experienced pharmacists working independently, one act-

ing as a check upon the other, thus guarding against the possibility of error.

The U. S. Public Health Service issues free publications on the care of children.

One-eighth of the children born in the United States die before they are a year old.

THE FROZEN SECTION AT BATTLE CREEK.

The pathology of former days concerned itself only with things after they had happened. Research was confined mostly to cadavers and the knowledge obtained was only in a general way applied to the extension of medical science. Now, however, this branch has a more direct and practical usefulness. A few up-to-date institutions, to which the Battle Creek Sanitarium has now been added, have a pathologist on duty whenever operations are being performed. If the surgeon finds a growth of the nature of which he is not sure, a portion of it is at once handed to the pathologist. With his microtome, he cuts a slice which may be as thin as one five-thousandth of an inch, and subjects it to the microscope. Upon his diagnosis as to the nature of the disease process depends the decision of the surgeon as to what should be done.

This investigation is done on living tissue frozen instantaneously with liquid carbonic acid and takes on an average only five minutes. The information thus obtained is a scientific check upon the clinical diagnosis and is valuable in every surgical case. It is of vital importance in the numerous cases of early cancer, which cannot be diagnosed in any other way, as the early beginning of every cancer is a cellular phenomenon and beyond the concept of the naked eye. The accumulated experience of all modern surgical clinics shows that cancer begins as a local disease and can be cured at this early stage by radical operation.

The unfortunate results of late operations in cancer were due to the fact that a diagnosis of cancer was not made until a demonstrable and palpable tumor had developed and the disease spread all through the system. The present-day horror of cancer that exists in the lay mind is

based on the distressing results of surgical operations—and for that matter of every other known method of treatment—in such late and advanced cases.

In early cases surgery offers the greatest chance for cure to the patient. Early operation, however, postulates early diagnosis by an expert surgical pathologist. About sixty years ago the first laboratory was erected in connection with internal medicine. It is to be hoped in the future no hospital will be found without a laboratory of biopathology adjoining the operating room.

THE WHOLESOMENESS OF GELATINE.

Gelatine is distinctly a modern food. In our grandmother's day the preparation of a gelatine dessert was a task requiring such a degree of skill, patience and effort that it was not frequently attempted. But today, when the many brands of commercial gelatine make its use simple and convenient so that it has become an every-day article of diet—the question of its dietetic value becomes of interest.

Gelatine is a wholesome article of diet because of a rather peculiar property. While it is not, as some suppose, a good substitute for albumen or protein foods, it has the faculty of saving albumen in the body from destruction. It dissolves more easily than albumen and acts as a guard between albumen and the body fluids which would destroy it. It thus saves albumen to the body, which is equivalent to supplying new albumen.

In addition to this indirect nutritive value, gelatine provides a most valuable means for conveying other kinds of nourishment in an appetizing and easily digested form. This is well illustrated in the case of persons who cannot assimilate ordinary milk readily, but the moment gelatine is added find it easily digestible. Gelatine is used today in many ways not ordinarily supposed. It is used in French soups, in the preparation of cold bouillon and consommé, in jellies, jams, candy, ice cream—as well as the well-known dessert preparations. It is also used extensively in many dishes for the sick and convalescing. In every case the use of gelatine may be said to increase the value of the dish.

In the jelly powders of commerce an incidental pure food problem arises in the matter of flavoring materials. The fruit flavorings that are mixed in powdered form with the powder are sometimes not made from the actual fruit juices, but are synthetic and subject to some of the criticisms that have been made of synthetic flavorings used at soda fountains.

Probably the only manufacturer who has entirely overcome the flavoring difficulties is Mr. Otis E. Glidden, for 17 years the leading expert in gelatine

desserts, and now general manager of the Waukesha Pure Food Company, makers of the new Jiffy-Jell. He has put all his years of experience into this dessert and in addition to guaranteeing an ultra-superior gelatine made by special processes in what is termed the model kitchen of the world, actual fruit flavors are furnished in liquid form, small glass vials of concentrated fruit juices being enclosed in the packets of gelatine. In the few months it has been on the market Jiffy-Jell is leading, all older gelatines in sales.

The new plan has made possible the use of the finest fruits in obtaining fruit essences and has enabled the company to include in its list of flavorings, pineapple, which has never been properly made in powder form. The company also offers a hitherto novel gelatine flavor in mint, which is proving highly popular for serving as a garnish or relish with meats and other entrees, or in making salads.

Gelatine with these actual fruit and mint flavors especially recommends itself for desserts, salads, and garnishes for early spring, when fresh fruits and herbs are scarce, not always fresh, and high-priced

BOOK REVIEWS

INTERNATIONAL CLINICS. Vol. II., Twenty-Seventh Series. J. B. Lippincott Co., Philadelphia.

Clinics by Christian, Barker (of Hopkins), McKee, Walsh, Edward Martin, Hirst, Anspach, Hartzell, Posey, and Isaac Jones, on a wide variety of subjects, make this a very valuable number of this very popular "quarterly." Sections on Treatment, Medicine, Dermatology, Gynecology, Ophthalmology and Surgery are made up of contributions from a number of very eminent English, French and American physicians and surgeons. Barker's clinic on "Typhoid Fever with Complications" is most interesting and instructive, and the clinic of Christian on "Gout and Infectious Arthritis" is also a very valuable feature of this volume.

COLLECTED PAPERS OF THE MAYO CLINIC. Vol. VIII., 1916. W. B. Saunders Company, Philadelphia. Cloth, \$6.50 net.

This volume is made up of papers setting forth the scientific work for 1916 of the workers in the Mayo Clinic and some of those on the Mayo Foundation in the University of Minnesota. As in most of the volumes previously issued, a bewildering array of subjects is covered, though conditions of the alimentary canal receive major attention. Two papers by Rosenow—one on "Elective Localization of the Streptococcus," and one on "Causation of Gastric and Duodenal Ulcer"—relate further experiments and results in

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his most remarkable work which has attracted and held the attention of the medical world for more than three years. A paper by Judd on "Cholecystitis; Changes Produced by the Removal of the Gallbladder," is a contribution of most distinctive value, his conclusions indicating that ideas long held as to cholecystitis and the function of the gallbladder must be revised. The work of Rosenow, Towne and Wheeler on poliomyelitis is published in this volume, which undoubtedly is one of the best yet published from the great Minnesota clinic.

PRACTICAL MEDICAL SERIES—EYE, EAR, NOSE, THROAT. 1917, Vol. III. The Year Book Publishers, Chicago.

This is the usual splendid review of the year's literature on diseases of the eye, ear, nose and throat, under the editorship of Drs. Casey A. Wood, Albert H. Andrews, and George E. Shambaugh.

SURGICAL CLINICS OF CHICAGO. Vol. 1, Number 3. Published bi-monthly by W. B. Saunders Company, Philadelphia. \$10.00 per annum.

Clinics by twenty-one of Chicago's best surgeons make up this third number of the Surgical Clinics of Chicago, among them being Bevan, Ochsner, Holstead, Wyllys Andrews, Beck, Eisen-drath, N. M. Percy. Case (Roentgenologist), Speed and Besley. Radiotherapy receives attention from Ochsner in his clinic on Carcinoma Uteri and from Case in his clinic on the "Comparison of the Operative and Radiotherapeutic Treatment of Uterine Myomas." Eisen-drath's clinic on "Gunshot Wounds of the Skull," Beck's clinic on "Treatment of Obstinate Sciatica," and Besley's clinic on "Regional Surgery: Diseases of the Chest Wall, Including the Pleura and Breast," are particularly valuable features of this number.

ROENTGEN TECNIC DIAGNOSTIC. By Norman C. Prince, M. D. 137 pages; 71 illustrations. C. V. Mosby Company, St. Louis.

Here is a little book of real value. It is written and profusely illustrated for the beginner in X-ray work, and gives one just the sort of information he needs and usually fails to get in his first post graduate course. Little points, things which seem elementary to the experienced are often insurmountable to the novice. How to reduce your tube, how to protect your patient from burns, how to develop photos, how to construct a dark-room. The problem of posture and position is cleverly presented. A table of the operation of the machine accompanies a photograph of a patient in position to get each part. If you can get a satisfactory photo of the urinary bladder, mastoid cells, dorsal spine or tubercular lungs, you will find this book interesting

but not absolutely needed; but if your photos are not just right at times, this little book may help you.

JACK WITHERSPOON.

DISEASES OF THE STOMACH, INTESTINES AND PANCREAS. Third Edition. By Robert Coleman Kemp, M. D., Prof. Gastro-intestinal Diseases, Fordham University Medical School. W. B. Saunders Company, New York and Philadelphia.

The third edition of Kemp's Diseases of the Stomach is a handsome, well illustrated and well indexed volume of about 1100 pages. No work in gastro-enterology is more frequently quoted, and the announcement of a new edition will be well received by those interested in this field. After a review of the embryology and anatomy of the gastro-intestinal tract the author gives an outline for history taking which is practical and if mastered will make the history the most important single aid to diagnosis—a position too often held by Roentgen ray. Disease of the stomach, pathological and functional, are taken up in the first half of the book. In the new work one is attracted to the chapters on Syphilis of the Stomach, Roentgen Ray Studies of the Whole Tract, Ulcer and Its Newer Methods of Treatment. The Sippy treatment and the author's treatment are explained in the functional diseases. A chapter is given to Cardiospasm and Vagatonia, and late works of Jelliffe, Hemmeter and others are quoted freely. In fact, with each chapter is a bibliography up to and including 1915-16. Chapters of interest are given to intestinal parasites, typhoid fever and diseases of the rectum. The third edition of Kemp comes up to expectations.

JACK WITHERSPOON.

THE SCIENCE OF NUTRITION. By Graham Lusk, Ph. D., Sc. D., F. R. S. (Edin.), Professor of Physiology at Cornell Medical School, New York. Third Edition. W. B. Saunders Company, Philadelphia, 1917. Cloth \$4.50 net.

The every-day doctor needs now as never before a dependable scientific treatise on nutrition. We know of none which better meet this need than the new third edition of "The Science of Nutrition" by Graham Lusk, one of the few truly great investigators in this particular field. The treatment of disease on a scientific basis demands an understanding upon the part of the physician of the composition of foods and the nature of food principles. The treatment of specific diseases in which nutritional disturbances are the major factors, as in diabetes, scurvy, pellagra, beri-beri and others, calls for a very clear conception of the science of nutrition; and this can be had only from the work of men like Lusk, who in the volume under review has brought together the ideas and conclusions of the foremost men of the world who have particularized in the study of metabolism in health and disease, as well as to present the results of his own painstaking original investigations.

THE JOURNAL

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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

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ANGIONEUROTIC OEDEMA—VISCERAL CRISIS.*

By J. L. McGehee, A.B., M.D., F.A.C.S.
Memphis.

Angioneurotic oedema, except in its manifestations as hives, is not of particularly frequent occurrence, and certainly, if we judge by the lack of literature and the brevity of text-book articles, its visceral manifestations are but little known, frequently not recognized and most frequently and unfortunately misdiagnosed as appendicitis or intussusception or obstruction of the bowel or some other acute intra-abdominal lesion demanding surgical treatment. It is for this reason that the following case is considered worthy of report.

A young unmarried woman, 21 years old, seamstress, consulted me April 2, 1917, complaining of a pain in the left iliac region, remittent in character, the exacerbations occurring at irregular intervals through the day, but always much more severe at night and about the same hour every night. The attacks of pain were always accompanied by nausea and severe headache, the duration of which was from a few minutes to one hour. The radiation of the pain was variable, at times up over the crest of the ilium and at other times down towards the urinary bladder. The attacks of pain would vary greatly in severity, from the slightest discomfort to the most excruciating type, simulating the passage of a renal calculus. The bowels have

been constipated since the onset of the illness now two weeks ago. Purgatives do not relieve. The taking of food, solid or liquid, into the stomach precipitates an attack. She swallows liquids better than solids.

The menstrual history is that she began at 17 years of age. The period has been regular, with six to eight week intervals and three days' duration and slight dysmenorrhoea. Last period March 4th, 1917.

Her past history is that she had scarlet fever and diphtheria as a child and has not been sick, until the present illness, for the last ten years.

The family history is that the father, mother, three sisters and two brothers are all living and in good health. Her temperature was 99, pulse 88, systolic blood pressure 110, diastolic 75. She was a well developed, well nourished young woman. Examination of the mouth, throat, lungs and heart was negative. The abdomen (during attack of pain moderately severe), general increased muscular rigidity and pain produced on pressure at a point on the left corresponding to McBurney's point. Deep pressure over McBurney's point does not give pain. Hook percussion over gall bladder does not give pain. The spleen is not enlarged. Fist percussion over both kidneys is negative. Deep pressure over both ovarian regions does not produce pain. Inspection of the introitus vaginae shows an unruptured hymen and mucoid discharge (examination of which by smear and culture showed only a streptothrix). Urine catheterized from the bladder gave a straw color, gravity of 1017, acid reaction, no albumin, no sugar, no casts, an occasional leucocyte,

*Read at meeting of West Tennessee Medical and Surgical Association at Martin, May, 1917.

an occasional red blood cell, and no motile bacilli. Her blood showed 6200 leucocytes, 69 polymorphonuclears, 21 lymphocytes, 5 large mononuclears, 4 eosinophiles, and 1 mast cell. No parasites, thick and thin smear. At 2 a. m. 4/3, a severe attack of pain, nausea and headache; duration, two hours.

Here, then, was a patient who had been ill two weeks with a pain in the left iliac fossa, characterized by severe exacerbations lasting from a few minutes to one hour and accompanied by nausea and severe headaches during the exacerbations; constipated since the onset of the attack, unrelieved by purgatives, with a rigid abdomen, with tenderness in the left iliac region, a temperature of 99 and pulse of 88, an occasional red blood cell in the bladder urine and no leucocytic response. You may well say the symptom complex is bizarre, impossible to correlate, and the diagnosis undetermined.

I referred her to my confrere, Dr. J. J. Cullings, for cystoscopic examination. This was done the 4th of April. Dr. Cullings reported a normal bladder, that the catheters passed easily to each kidney, that cultures from the urine of each kidney were negative, and that microscopic examination showed only an occasional red blood cell in the urine of each. The presence of these few cells, he attributed to trauma incident to the passage of the catheter. "The trail was no warmer."

I then made a pelvic examination, rupturing the hymen, finding the uterus and its appendages normal in all respects. Immediately following this rather prolonged and forceful examination, the skin of the lower abdomen, subjected to pressure and irritation by the outer hand in the bimanual manipulations, showed the characteristic wheals or urticarial rash. This was the cue. At once the probability of the visceral crisis of the erythema group of skin diseases dawned upon me.

On this hypothesis, she was placed on hyoseyamine gr. 1/100 and camphor monobromate gr. ii, and was relieved in eight or ten hours. The administration of these drugs seemed to have a purgative effect. Five or six days later there was another attack which

was relieved within an hour by one dose of the hyoseyamine and camphor monobromate. At the end of two weeks there has been no return of the attacks. I have heard nothing from her since.

The articles in the text-books on this subject are so meager that the following extracts from the literature seem worth while.

In one case subjected to exploratory laparotomy by Dr. Warren L. Duffield, of Brooklyn, he reports the findings as follows:

"The small intestine was everywhere pale, firmly contracted and ribbon-like and seemed to occupy the central portion of the abdomen. Although the small intestine was firmly contracted, the slightest traumatism with the finger or instrument would cause a still further marked contraction for a distance of six or eight inches."

Crispin, in an article entitled "The Visceral Crisis of Angioneurotic Oedema" (collected papers of the Mayo Clinic, 1915, page 823), states: "There is another type probably resulting from the same primary cause that is occasionally mistaken for appendicitis or appendiceal abscess in which the onset and disappearance of pain are more gradual. A swelling often appears in the lower right abdomen which suggests appendiceal abscess. There may be increased temperature; the symptoms, usually of short duration, are out of proportion to the patient's general condition, which is fairly good. In operating on these patients, a brawny induration, often of the whole cecum and appendix, thick-walled and somewhat hard, is found."

In Osler's article, "The Surgical Importance of the Visceral Crisis of the Erythema Group of Skin Diseases" (American Journal of Medical Sciences, May, 1904), he states: "It is also to be borne in mind that recurring colic may be for many years the sole feature of this remarkable disease (angioneurotic oedema), as in cases Nos. 17 and 27 of my series, in which the obscurity of the attacks of colic was not cleared up until the final appearance of skin lesions."

He further states, "The possibility of mistaking these visceral crises for appendicitis or intussusception or obstruction of the bowel

and handing the patient over to the surgeon for operation is by no means remote," and still further (*American Journal of Medical Sciences*, January, 1904), "One of the most constant features of this whole group, occurring in twenty-five of the cases, is the recurring attacks of colic, sometimes with vomiting, sometimes with diarrhoea, occasionally with the passage of blood."

Crispin confirms Osler's observations and states, "These visceral or gastro-intestinal crises may be so severe at first sight as to cause concern, and they may be without external clues in the nature of lesions of the skin."

"The abdominal pain complained of in these cases has been ascribed in some to a distention or stretching of the bowel wall due to the oedema, in others to spasm, a pre-oedematous stage of angioneurotic oedema."

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DISCUSSION.

DR. J. J. CULLINGS, Memphis: This is rather a hard subject to take up for discussion, for we know very little about it, and because we know nothing of the etiology. Our attention was first called to the condition in the seventeenth century by a report of a case of angio-neurotic edema. As to etiology, it seems in some cases that there is a neurasthenic element. It differs from ordinary hives in that there is a marked difference in the size of the wheels. We have all seen cases of angio-neurotic edema, maybe, without the visceral crises. We have seen cases, especially in the colored race, of a swollen lip which appeared during the night and noticed in the morning, which in most cases the patient will say was due to a spider bite, but a careful examination will show no signs of a bite. The condition has a predilection for the loose tissues, as the lip, eye, etc. It is closely associated with hives or ordinary erythema. Hives, however, will a great many times get well if the patient will cut out certain proteins from the diet, while the diet in

angio-neurotic edema seems to have no influence.

The skin manifestations last from a few hours to a day. It seems to have a hereditary tendency. One attack may show only the skin lesions, one may be urticaria and the next purpura. The only difference is that in one case we have the red blood cells and in the other the blood serum predominates.

Treatment: The duration is usually short, but hyoscine and calcium lactate should be given. The condition may disappear, but another attack is probable. It is not usually serious unless it affects the glottis, causing edema of the glottis, when the patient may die.

We must keep in mind the visceral crises. If the skin lesion is present the diagnosis is easy, but if not we may think we have an abdominal condition, but the blood count, etc., usually clears it up.

Since Osler's article on this subject in 1904, I have been on the lookout for such cases as reported by Dr. McGee. I can recall four or five cases in which I felt sure the abdominal pain was due to this condition. Only in two or three have they been accompanied by other symptoms sufficient to corroborate the diagnosis. We may get the history that the patient has been subject to urticaria, also we may be guided by the neurotic element and the location of the pain. By means of the leucocyte count and other means we may be sure that we are not dealing with a surgical condition.

DR. GEO. R. LIVERMORE, Memphis: I would like to ask Dr. McGee if, during his work on this paper, he has found anything in regard to the relation of salvarsan with this condition; as to whether, when we see cases of swollen mouth and face after the administration of salvarsan, it is angio-neurotic edema or some of the manifestations of arsenic poisoning.

DR. WM. KRAUSS, Memphis: We usually fall down in the diagnosis of this condition when only the abdominal symptoms are present. I have been impressed with the visceral and skin manifestations of this disease. I recall one case of urticaria which was treated by the application of chloroform to the rash and a violent colic came on. Some are called ptomaine poison. There is no such thing, for if it is ptomaine it is not poison, and, if poison, it is not ptomaine. We may arrive at a diagnosis by producing some irritation of the skin by scratching with something sharp and see the skin rise up. It is a trophoneurosis and a metastatic arrangement. The leucocyte count will demonstrate as to whether it is a surgical condition or not.

DR. C. A. ROBERTSON, Nashville: This subject is of especial interest to me. If you remember, one of Dr. Osler's cases of 1904, referred to C. A. R., I have been battling with this trou-

ble all my life. I have had all the symptoms to be found in this condition from the skin manifestations, a hemorrhage from the kidneys, otitis media and, in 1906, a violent gastric hemorrhage. It has been a source of discomfort and great anxiety to me. I do not believe that they ever get well. There is not any doubt but that many cases go to operation erroneously. Many years ago I had what was supposed to be acute appendicitis—it was at the time that the operation was just coming into vogue. My attack was not at all typical and I was led to further the investigation and went to Hopkins, under Dr. Osler, who worked out the case and predicted many of the things that have occurred, including the kidney and gastric hemorrhages. I have feared a hemorrhage into the central nervous system, and that I would not be here to tell the story.

DR. J. L. McGEHEE (closing): This disease is of especial interest to those of us who are surgeons. I report this case so that if the abdomen is opened and no pathology is seen, this should be considered. We should remember the small, ribbon-like contractions of the intestine which, if touched, will produce violent contractions, and this should make the diagnosis. We should remember that there is a type which may simulate appendicitis. It may be diagnosed by producing irritation with the finger-nails on the skin. It is well to bear in mind this condition and get a careful history; inquire very particularly as to the existence of erythema, and test skin by irritation. A drug such as hyoscine or atropine is of value. I reported this case for its peculiar negative value to us. In regard to the tongue, I think it may be swollen as a manifestation of the disease. The incision into the tongue may have aided in its reduction.

In regard to the salvarsan, I did not see that this would cause it, but should think it was more likely arsenic poison. I have not heard from this case in three weeks and cannot tell as to its recurrence, but I think that if I had not diagnosed it she would have been subjected to an exploratory laparotomy.

A MENTAL AND PHYSICAL SURVEY OF RETARDED SCHOOL CHILDREN.*

By R. H. Perry, M.D.
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Few problems of school medical inspection are more important or perplexing than that

*From the Nashville City School Clinic. Read before the Nashville Academy of Medicine, July 17th, 1917.

of the retarded child. The pupil who repeats the same grade year after year is not only a source of great worry to both parents and teachers, but is also an additional expense to the city and state. To determine if possible the causes of such retardation in school work, a mental and physical survey was made in Nashville of a number of retarded children. For this purpose the retarded children of two of the city schools, the Boys' Special and the Head School, were selected as offering the best field for study. Each child received a thorough physical examination and a Binet mental test.

In all, 136 retarded children were examined. Of these 88 were from the Boys' Special and 48 from the Head School; 122 were boys and 14 girls. As to nationality, 131 were American born, 1 was a German, 1 Greek, 1 Hungarian, and 2 were Russian Jews. Inability to understand the English language was the reason for retardation in four of the foreign born. The ages of the children varied from 9 to 17 years, and the number of years they were retarded varied from 2 to 8. The average retardation for the whole group was 2.9 years. The largest number of retardation occurred at the thirteenth year, as shown in Table No. 1.

Table I.

(Age at which retardation occurred.)		
Age.	Number.	Per Cent.
9	5	3.6
10	15	11.3
11	16	11.9
12	22	16.2
13	39	28.7
14	26	19.2
15	9	6.2
16	4	2.9
Total	136	100.0

The school subjects in which the children were most deficient were found to be arithmetic and spelling, while fewer were defective in reading, writing, English and geography. Where they exhibited any interest in school work, it was usually in manual training. Incurability and chronic truancy, frequent illness, and constant changing of schools were the causes of 21, or 15.3%, be-

ing retarded in their grades.

To determine the influence of the home and environmental conditions on the mental and physical condition of the children, an investigation of the social condition of the parents was made. One-half were found to be extremely poor, while the other half were reported as being in fair or moderate financial circumstances. Thirty-seven per cent of the families lived in dirty houses, tenements, and in some cases, shacks. These homes were located in bad neighborhoods, and unmoral and often immoral conditions existed in the homes. The children of these families were all poorly fed, had irregular habits as to sleep, kept bad company, were bad at home, and often cruelly treated by the parents.

On the other hand, 63% of all the families were found living in clean, well ventilated homes, which were located in good neighborhoods. These parents were moral in the homes, kind to the children, and gave them good food. These children were good at home, kept good company and regular hours.

These facts are useful in explaining many of the cases of malnutrition and anaemia that were found during the examination, and also some of the cases of incorrigibility and chronic truancy. However, to analyze this data so as to express in terms of percentage the exact number influenced or affected by home conditions so as to be retarded is a matter of relative opinion and, of course, would vary with the personal point of view.

Mental Examination.

The mental examination consisted of a Binet test. These tests were given by an experienced psychologist so as to insure uniformity in the results. While we do not believe with some that the Binet test is an exact analytical estimate of one's mental capacity, for only by a routine examination of all of the mental facilities can we make an accurate diagnosis, yet we do feel that it is a reliable aid in our classification of backward children.

Table II.

Results of Binet Mental Tests of Retarded School Children.

	No.	Pct.
Mental age more than physical age	1	.8
Mental age equal to physical age	4	3.0
Mental age under physical age:		
1 year under physical age	13	10.0
2 years under physical age	46	35.4
3 years under physical age	35	26.9
4 years under physical age	21	16.2
5 years under physical age	9	6.9
6 years under physical age	0	0.0
7 years under physical age	0	0.0
8 years under physical age	1	.8
Total	130	100.0
Not examined	6	4.6

Binet has asserted his belief that for children over 9 years of age, those who are more than three years backward by the scale are mentally defective. According to such interpretation the above table would show that 23.4% come in this class. While this number of children mentally subnormal is apparently high, it must be remembered that a large number of those in this class were pupils in the Special School, having been sent there from the various other schools in the city on account of retardation.

As to those who tested one, two, or three years below their physical age, many factors, as home surroundings and general health, undoubtedly play a large part in their low grade standing. It was surprising to find so many physical defects, as defective vision and hearing, which undoubtedly caused the low grade tests in many cases. Even some who were as low as four years below age were possibly influenced by these same factors.

Physical Examination.

Each child received a thorough physical examination, and also a special examination of the eyes, ears, nose, throat, and teeth. Fifty were weighed and measured to determine how they compared with the normal standards. The result of this was as follows:

- Normal height and weight --- 10, or 20%
- Over height and weight ----- 7, or 14%
- Under height and weight ----- 26, or 52%
- Over height and under weight 7, or 14%

These figures represent the average for the whole group, as the children were selected indiscriminately.

Of the 136 children examined, only 5 failed to show some form of physical defect. A complete list of the defects found is shown in Table No. III.

Table III.

Physical Defects Found in 136 Retarded

Disease.	School Children.	
	Occurring as only defects.	Asso. with other defects.
Anaemia -----	0	17
Malnutrition -----	0	24
Defective vision -----	1	46
Defective nasal breathing -----	0	14
Hypertrophied tonsils -	2	55
Defective hearing -----	0	5
Defective teeth -----	3	128
Pulmonary disease ----	0	3
Cardiac disease -----	0	7
Skin diseases -----	0	5
Congenital syphilis ---	0	6
Phimosis -----	1	78
Inguinal hernia -----	0	1
Undescended testicles--	0	1
Orthopedic deformities--	0	8
Goitre in boy of 11----	0	1
Chorea -----	0	1
Enuresis -----	0	8
Total -----	7	408

This gives an average of three defects per child, and emphasizes the importance of physical defects as a cause of retardation. From this table we see that 17.6% of all those examined were suffering from malnutrition, 34.5% with defective vision, 41.9 with hypertrophied and diseased tonsils, and 96.1% with defective teeth. These facts alone should explain many of our cases of retardation.

From the above we may conclude that the causes of retardation in the 136 children examined were as follows:

	No. of pupils.	Per cent of all pupils.
1. Mentality -----	31	23.4%
2. Physical defects -----	80	58.8%

3. Nationality -----	4	2.5%
4. Truancy, illness, and changing schools ---	21	15.3%
	136	100.0%

Discussion.

The primary object of this survey was to determine whether retardation is due in most instances to mental or physical causes. As seen from the above figures, by far the larger number of cases are explained by physical defects, and, as stated before, probably some of those classed as mentally subnormal have a physical basis.

An effort was also made to find the relationship between mental and physical defects on the one hand and juvenile delinquency on the other. To this end the records of the Juvenile Court were investigated to determine how many of the children had ever been in court. In all, 20, or 14.6%, had been before the court. Of these 20 there were 8, or 40%, who belonged to the class that had tested as feeble-minded according to the Binet scale. They were up for various offenses as truancy, rock fighting, destruction of public property, disorderly conduct, and larceny.

These facts only corroborate the evidence of other investigators along this line who have pointed out that nerve irritation due to phimosis, adenoids, diseased tonsils, malnutrition, eye-strain, anaemia, impacted teeth, hernia, and worms is the principal cause of juvenile delinquency, especially when these influences act on a child whose nervous system is unstable, at or near the age of puberty. In our cases the majority of the offenders were in the thirteenth year.

Few of those examined complained of any symptoms. Only 4 had frequent and 12 occasional headaches. In none of the cases was there a history of fits, convulsions, or fainting spells.

As stated before, more than one-third of the children lived in dirty, poorly ventilated homes and received poor and, in some cases, an insufficient amount of nourishment. Fifty-seven per cent of all those examined constantly drank tea and coffee. These factors

in themselves are sufficient for the production of anaemia, malnutrition and consequent inefficiency, for without the proper amount and kind of food, plenty of sleep, and good pure air the growing child cannot reach his maximum physical development, much less attain anywhere near normal mental caliber. On the other hand over-eating is just as injurious and productive of bad results.

Itoach (1), in an investigation into the effects of improper nutrition on retarded children, selected 113 such pupils and gave them a well regulated diet for a period of four weeks. The effect of this is shown by the fact that the average for the whole group in spelling increased from 76.4 to 83.2, and from 69.0 to 72.0 in arithmetic. No doubt many in our series of cases would do the same if this experiment were tried on them.

That 34.5% of all those examined had defective eyesight calls for more than passing comment. A pupil with poor eyesight cannot advance until this is corrected. This is especially true if the child has an unstable nervous system. Therefore, it is a good investment for cities to establish eye clinics for refracting and furnishing glasses free to at least the poorer pupils. This is economy rather than charity, as it increases the pupil's efficiency and thus reduces the cost of his education through needless repetition of grades. This is a day when efficiency is being applied in all large business concerns, and it should also be applied to our public school system, which, after all, is but a business. A number of interesting cases of rapid progress in pupils previously retarded following the application of properly fitting glasses have recently come under our observation at the City School Clinic.

The effect of adenoids and diseased tonsils is too well known to need more than mention as a cause of retardation. The same may be said of defective hearing.

Our knowledge of the direct relationship which dental disorders bear to physical disabilities and various forms of bodily ill health is being gradually broadened. We now know that the child with carious teeth suffers many disorders that formerly were not

thought of in connection with the teeth. Thus many of the formerly unexplained cases of malnutrition and anaemia can now be definitely traced to decayed teeth. In those who had carious teeth there were anywhere from one to twelve decayed. The average number for each one was three. The extremely high number, 96.1%, of those showing dental defects is of interest when we compare them with figures obtained in the routine examination of New York City school children, who showed 49.4% of dental defects (2). This indicated that dental caries has a decidedly important place in the production of retardation.

The relatively larger number of those showing cardiac disease, 0.5%, than pulmonary disease, 0.3%, was somewhat surprising. Only cases showing actual enlargement were classed as organic heart lesions. Twenty, or 14%, of those examined showed general lymph-glandular enlargement. This, in most cases, was associated with malnutrition and anaemia and was probably caused by these conditions.

Phimosis is undoubtedly a cause of many nervous symptoms of a serious character in delicate and anaemic children who have unstable nervous centers. In the healthy child it may exist to a marked degree without causing any symptoms, but in children of the class just mentioned it is an important factor in the production of many neuroses. This is shown by the fact that 10% of the cases with phimosis had enuresis. Phimosis, as has been said, is one of the important factors in the production of juvenile delinquency.

The facts discovered in this survey only go to prove the value and economy of medical school inspection as a community investment, for only through adequate inspection can the defects of school children be discovered and corrected. This is real economy, as it saves the cost of educating "repeaters."

As to the results to be obtained from correcting the defects found in those whom we have examined, we can only say that sufficient time has not elapsed for us to make any definite statement. However, it might be of interest to state that Cronin (3), in an inves-

tigation of this kind, selected 217 New York City school children who had been assigned to classes for mental defectives. Of these 123 were found to be true mental defectives and did not improve in school work on correcting their physical defects, whereas 94 proved mentally normal and showed marked pedagogic improvement when their defects were remedied. In our cases, however, we believe there would be marked improvement in many of those assigned to the class of the mentally abnormal.

Conclusions.

(1) In this series of cases the majority of retarded children are not mentally subnormal, but their failure to advance is due to some remediable physical defect.

(2) These defects in the majority of cases are defective vision or hearing, hypertrophied and diseased tonsils, carious teeth, malnutrition and anaemia, phimosis and its reflex nervous manifestations.

(3) The Binet test is of aid in classifying backward children, but a diagnosis of a mental abnormality should not rest on it alone.

(4) Physical and mental defects are responsible for many cases of juvenile delinquency.

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1. (Roach) *Translations Fourth Inter. Congress on Child Hygiene*, Vol. II, page 417.
2. (Baker) *Ibid.*, Vol. IV, page 337.
3. (Cronin) *Ibid.*, Vol. III, page 444.

ETIOLOGY OF THE DISEASES OF THE ACCESSORY SINUSES.*

By J. McChesney Hogshead, M.D.
Chattanooga.

There are several distinct processes by which the mucous membrane lining—the accessory sinuses—may become diseased, namely: First, through direct invasion of the healthy sinus by pathogenic bacteria. By this we mean that the sinus is primarily affected by micro-organisms which find their entrance either through the ostei, the circu-

latory system, or through the teeth in the case of the maxillary sinus. Such sinus troubles complicating influenza, croupous pneumonia, diphtheria and, perhaps, erysipelas evidently are due to primary inflammation of the sinus itself.

Lilenthal first advanced the theory in regard to influenza and since that time this disease has been generally considered the most potent factor in the causation of sinus affection. The precise rationale as to why this germ shows especial predilection for the mucous membrane of these structures has not yet definitely been explained. Weichselbaum states that the sinuses are always infected at some time during the course of influenza. Hajek is of the opinion that the sinus disease is rather a sequel than a complication of influenza.

Bacteriological examinations of diseased sinuses in patients succumbing to croupous pneumonia practically always shows cultures of the diplococcus pneumoniae. A similar condition has been demonstrated in diseased sinuses of diphtheria patients. The Klebs-Loeffler was found in these sinuses, but, differing from diphtheritic inflammations elsewhere, there was no false membrane. The inflammatory changes in the sinuses were the same as those produced by other organisms.

Independent sinusitis often accompanies erysipelas, but whether the sinusitis is the cause of the erysipelas, or vice-versa, is still uncertain in the minds of many. However, Weichselbaum believes he was able to demonstrate conclusively that the initial lesion was in the sinus.

It is extremely doubtful that sinus affection is set up by the invasion of pathogenic bacteria into a healthy sinus except in rare instances. The mucous membrane of the sinus is normally able to withstand the presence of such germs and expel them through the action of the cilia, and infection results only when this power has become enfeebled or lost, by occlusion of drainage channels or swelling of mucous membrane of the ostei.

It is perfectly clear to me, and I hope to all of you, that any condition which would cause general inflammation of the nasal mu-

*Read before Section on Ophthalmology and Oto-laryngology at Annual Meeting of Tennessee State Medical Association, Nashville, April, 1917.

cosa must of necessity affect the sinuses, for Zuckerkandl first pointed out that the nasal mucosa communicates directly with that of the sinuses, and the mucous membranes of the two receive their blood supply from the same source. This being true, it necessarily follows that any disease causing general acute rhinitis must cause acute general sinusitis; thus a simple thing as too frequent coryza may produce a sinusitis in the manner described as follows: Certain portions of the nasal mucosa in the neighborhood of the sinus ostium are left oedematous and hyperplastic. At various times, particularly when the patient is reclining, the blood pressure is higher in this locality, with consequent swelling and temporary occlusion of that particular ostium. The sinus mucosa, in the meantime, is absorbing the oxygen which is contained in the sinus, but, as no more can enter, there results, within, a condition of negative pressure, with swelling of and transudation through the mucous membrane. Let us accept that, in a longer or shorter period of time, the ostium again becomes patulous with resolution of the swollen sinus mucosa. The membrane, however, does not have time to fully regenerate before the ostium is again occluded through the same causes. This constant swelling and irritation of the mucosa produces inflammatory tissue changes which deprive it of a certain amount of vitality, thus causing it to offer a suitable culture medium for pyogenic bacteria the first time the individual contracts a severe acute coryza. Thus you can easily understand that with the mucous membrane partially devitalized and the sinus half full of exudate it is only a step to the production of a purulent inflammation after the introduction of pus-producing organisms.

Secondly, sinus disease may be produced through the direct extension of inflammation from the nasal mucosa or from the bone or teeth. This latter is most common in the maxillary sinus and results from carious roots of teeth causing periosteal abscesses particularly of the second and third molar. This is the cause of antrum trouble in about twenty-five per cent of cases. Tuberculosis, syphilis and malignancy are given as the causes of

sinus trouble by a good many authors, but empyema of the sinuses due to the tubercle bacillus solely is particularly rare.

Syphilis in the third stage shows a marked predilection to attack the nose, particularly the osseous septum. It also affects the ethmoid capsule and outer nasal wall, causing extensive necrosis of these structures, but rarely ever attacks the other sinuses. Traumatism is by no means as rare a causative factor as is believed by some.

Foreign bodies in the sinuses may set up inflammation. We might mention foreign bodies left by the physician, such as cotton, broken probes, etc., also gastric contents forced into the sinuses through vomiting. Harke, Wertheim and Lack have all reported several cases of stomach contents found in the sinuses.

Sinusitis, of course, may be produced through contamination by the pus from an overlying sinus; such is many times the case with the maxillary antrum. Due to its peculiar location, pus from the frontal and ethmoids may drain into it continually, thus producing suppuration. Hajek is also of the opinion that in certain positions of the head the sphenoid may receive pus from the posterior ethmoid, or vice-versa. I can easily see how this is possible in the first instance, but the latter hardly seems plausible.

If I am not treading upon the part of the work assigned to Dr. Ezell, I would like to state a few of the causes in the chronicity of the various sinus diseases. Among them I would mention (1) interference with normal drainage, such as deviated septum, spurs, and abnormal turbinates; (2) inflammatory changes occurring in the mucous membrane, in which case the mucous membrane may be changed into a mere fibrous tissue sac; (3) continuation of the irritation as in the case of foreign bodies, etc.; (4) secretions flowing in from other sinuses. Lastly, the resistance of the patient, virulence of the infecting organism, and the susceptibility of the patient are all concerned in making the condition chronic.

Of these conditions, the most important are the interference of the normal drainage and the inflammatory changes which are the re-

sult of long continued suppuration. Many times you will be at a loss to understand why a sinus does not heal when apparently perfect drainage has been procured. However, in these cases oftentimes removal of a spur or the simple straightening of the septum by a submucous resection will be rewarded in a short time by complete cure. I mention this one point in particular because, while in itself a very simple procedure, yet in reality results are accomplished by it and cures produced that have resisted all other methods.

[Editor's Note.—This paper was read as a part of a symposium on "Diseases of the Accessory Nasal Sinuses" and should have appeared last month. Its transmission to the Journal was, unfortunately, delayed until too late for publication with the papers of Drs. Wood and Ezell, read in conjunction.]

X-RAY TREATMENT OF SKIN DISEASES.

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What the beginner in radiotherapy wants to know is "How much X-ray should be given for a particular condition, and then how often the dose is to be repeated?" This question can only be answered conditionally. Since the discovery of the Roentgen ray twenty-two years ago there have been volumes written on the subject. After reading it all one seems to have but little better grip on the question, and there are good reasons for this. First, there are no two conditions which are amenable to X-ray treatment that are exactly alike; therefore, no specific dose can be outlined. Second, there are hardly two machines which will, when operated by the same technic, deliver exactly the same quality and quantity of X-ray; and along with this there is usually some considerable difference in the delivery of the current from the electric company's lines.

The manufacturers of X-ray machines can readily show how to operate to get practically specific results on an X-ray plate, but not so as to pathological conditions, for the reasons just mentioned and because disease cannot be compared to the emulsion on a photographic

plate, which is always the same and therefore always subject to the same doses or exposures, where only the question of time and penetration to be considered (practically speaking). But in the case of an epithelioma, for instance, we have the question of milliamperage, time, penetration, filtration, thickness and location of the lesion, susceptibility and possible idiosyncrasy, when to repeat the dose and how often, etc.

And so it goes; but back to the first question of how much to give. Up until within the last few years it was the custom to give epitheliomata anywhere from 20 to 200 or more doses (Sequeira mentions 1,000 as a maximum), depending upon the size and condition of the growth, but with the years of experience there has been developed a more scientific technic, which allows the application of massive or intensive doses, bringing the number down to from one to four or five treatments for such conditions. For the more superficial diseases, while the dose is much smaller than for epithelioma, it is massive as compared to the old method, when there was no definite way to measure the quantity and quality.

It was just this lack of ability to give definite quantities of X-ray and the consequent bad results that caused the wave of pessimism after the rush of inexperienced operators to take up radiotherapy. But now, with the radiometer to measure the quantity, and the penetrometer to measure the quality, and with operators who have gone at it cautiously, there has been wonderful work done, and X-ray therapy is now at high tide. However, there is yet room for improvement and with it still greater possibilities in radiotherapy.

X-ray can produce anywhere from nothing obvious to a profound modification in the structure of the skin, but the effect is most marked upon the cells of the diseased tissue; for instance, the cells of rodent ulcer and granuloma undergo a profound alteration before the normal cells of the epidermis are affected, but if pushed beyond a certain point the ray will cause destruction of the normal elements of the skin and even the subcutaneous tissues.

The quantity and especially the quality

(penetration) of the ray vary considerably with the character of the vacuum in the tube. This vacuum is estimated by the spark-gap or the penetrometer, or preferably by both. There are various penetrometers on the market, but the instrument of Benoist is probably the most popular and the Holz-knecht radiometer is probably the most popular quantimeter.

A short exposure of, say, four or five milliamperes for one minute produces no obvious effect upon the skin, but with larger doses a series of phenomena is produced which may be roughly shown in this way: An exposure of twenty milliamperes minutes (4 ma for 5 min.) with a spark-gap of 4" (Benoist 4) without a filter and with the anode 8" from the skin with my machine (interrupterless transformer type) is equal to two Holz-knecht units with the pastille, which is used with the radiometer on the skin; or is equal to 8H units at "half distance" and will usually cause a decided erythema. This is the so-called erythema dose. The same exposure with a 1 m.m. aluminum filter discolors the pastille to 1H unit and without an erythema. Practically $\frac{3}{4}$ to 1H unit more can be given when a filter is used, and this holds good as the penetration is increased. This means that the pastille would be discolored $\frac{3}{4}$ to 1H more provided it is placed so that it receives unfiltered ray, but in measuring the dose in actual treatment the pastille is to be placed upon the surface treated and receives the same quantity and quality of ray that the skin does, whether it be filtered or not. An exposure of H1 $\frac{1}{4}$ B7, which is about equal to the Saboraud-Noire "B" tint, will cause epilation after fifteen to twenty days and usually without an erythema, while increasing to H1 $\frac{3}{4}$ will cause an erythema and very likely a permanent epilation after about fifteen days. An exposure of over H2 will cause vesication in ten to twelve days, and of around 3H will cause ulceration in ten days, with possible recovery, while H4 will likely cause an incurable gangrene. This is dealing with an unfiltered ray.

In the treatment of skin diseases a fair knowledge of dermatology seems to me to be essential, as well as skill, in modern Roentgen

ray technic. For instance, dark skins will not react as readily as the lighter complexions; as a rule, an anemic skin is less susceptible to the ray than a more or less inflamed skin, and the application of counter-irritants will render the skin more susceptible, etc.

By noting the technic used, i. e. the milliamperage, time, spark-gap, position of rheostat, etc., one can repeat any given dose at any future time, especially with the Coolidge tube, where you simply move its special rheostat up or down to get a particular spark-gap or degree of penetration or vacuum, this being controlled by the amount of heating current turned into the tube by the low voltage transformer supplied with it.

Diseases Amenable to Radiotherapy.

Group I.

These are best treated by a sub-erythema dose of one-half the erythema dose and under, as the case seems to indicate: Disidrosis, eczema, chronic patches and of the anus and vulva and of the hands, ringworm of the body, psoriasis of the skin and nails, dermatitis herpetiformis, lichen (hypertrophic resistant patches), seborrhoeic dermatitis, oily seborrhoea of the face, acne vulgaris and indurata, hyperidrosis, bromidrosis.

Subacute eczema of the backs of the hands is nearly always cleared up by a few doses. Psoriasis should first be cleared up by medicinal treatment until only a few resistant patches are left and then these may be readily removed by a few doses. Pruritus from many causes often disappears after a few small doses.

Group II.

Doses of about three-fourths the erythema dose will usually suffice for this group: Tuberculosis of the skin and glands, as tuberculosis verrucosa cutis, serofuloderma, indolent deep-seated tuberculous glands, lupus vulgaris, erythema induratum, and bastomycosis, granuloma annulare, callosities, verruca, milium, senile keratosis, mycosis fungoides.

The deep-seated lesions had best have filtered doses. Tuberculous glands should have 1 to 2 H of a very hard ray and a 2 to 3 m.m. Al. filter. In the treatment of milium the

contents of the sacs are to be expressed and then the areas rayed, using a thin filter.

Group III.

Doses of 1 H. and over: Keloid, vascular and hairy nevi, epithelioma, sarcoma cutis, tinea sycosis and capitis and of the nails, aene keloidal, rhinophyma, Hodgkin's disease, leukemia (both forms), enlarged thymus, hyperthyroidism, and some forms of enlarged prostate.

Keloids and vascular nevi should have filtered doses, as it usually takes very intensive treatment for them. In the old days epitheliomata were given as many as 200 doses. Today we are removing them without a scar with one to four doses three to four weeks apart of H 1 to 2½, B 7 to 10, according to size and thickness. Over 1¼ H may produce an erythema, but this is often desirable in treating epithelioma. With the heavier doses it is often wise to use a filter. Of course, the normal skin bordering the tumor is to be covered with a thin sheet of lead foil about 1/32 in. thick.

X-ray is undoubtedly the best treatment for ringworm of the scalp and if it is pretty well scattered the whole scalp should be epilated. In such cases five areas are to be rayed: the vertex, anterior and posterior and two lateral surfaces are exposed to H 1 to H 1¼ B 7 or 8, which will epilate the scalp in two to three weeks, bringing the parasite out with the falling hair. The hair will regrow in two to three months. Ringworm of the nails should have filtered ray.

Any extensive involvement of the skin, such as mycosis fungoides may get to be, should be treated in moderate sized different areas once a week, for the reason that too rapid involution of the lesions produces too much systemic reaction. In mycosis fungoides we can only hope for temporary improvement.

It should be understood that, every case being a law unto itself, the doses outlined above would not always apply.

In August, 1916, a man who had had a nephrectomy for tuberculosis of the kidney was referred to me for X-ray treatment of a sinus which was still discharging after about two months. Six doses of H 1, B 9

with 1 m.m. Al. filter were given in six weeks. There has been no discharge from the sinus since the second dose. Of course, doses given this rapidly must be applied from various angles. An erythema was produced about the opening, but this promptly cleared up. A 2 m.m. filter would have been better used. Of all these diseases that are more or less amenable to radiotherapy the happiest results I have gotten, I think, have been in the treatment of epitheliomata. To me it seems wonderful to see these pre-cancerous and cancerous growths melt away under properly applied X-ray.

INTUSSUSCEPTION.*

By W. F. Clary, M.D.,
Memphis.

Of all the forms of intestinal obstruction, the most interesting features are observed in the variety known as intussusception, invagination or telescoping of the bowel.

According to statistics gathered by Traves about twelve years ago, three-eighths of the cases of intestinal obstruction were of the intussusception variety. Since that time abdominal surgery for inflammatory conditions has been very much more frequent and many more lives have been saved, but with a result of many more adhesions being left to increase the percentage of obstruction from this cause. Now it is safe to say that obstruction by bands or adhesions outnumbers all other varieties. At the present time we would say that intussusception furnishes about one-sixth of the cases of intestinal obstruction.

Causes: The chief predisposing factor is childhood. Fifty per cent of the cases are under 10 years of age, about one-third of these occurring under one year of age. Among adults this disease is rare, and when it does occur it is usually of a chronic type. The next in importance in the predisposing causes is entirely anatomical, namely, (1) an active ileum making a juncture with a passive colon, (2) sphincteric action at the ileo-

*Read before meeting of West Tennessee Medical Surgical Association, Martin, May, 1917.

caecal opening, and (3) an elongated mesentery. Of the direct causes the most important are perverted or irregular muscular action, polipi, inverted appendix or a Meekel's diverticulum.

The **varieties** of intussusception according to location are classed with reference to the portions of the gut involved. Foremost among these is the ileo-caecal variety, comprising 40% of the cases, the enteric form, the colic, ileo-colic.

Here I wish to add a new variety. A recently removed specimen I will present for your consideration. According to the parts involved, I am forced to call it an ileo-caeco-appendiceal-colic invagination.

The **pathology** varies and depends upon the amount of constriction at the neck upon the mesenteric blood vessels, the amount of the gut involved and the length of time the process has existed, together with the presence or absence of infection. It would require a paper of too much length to discuss these features.

For the sake of brevity, only the salient features of the **symptomatology** will be considered. The more complete the obstruction, the more violent will be the symptoms. A child may die within a few hours after the process has started, from abdominal shock or convulsions. In the cases which we usually see, the occlusion is not quite so complete and the onset is characterized by abdominal pain, colicky and intermittent diarrhea, blood and mucus in the stool and tenesmus, with flaccid abdominal muscles except during paroxysms of colic. The more complete the obstruction, the more pronounced will be the vomiting, which is present to a varying extent in all cases.

The lower down the obstruction, the less frequent and the less copious will the vomiting be. The vomiting will be less frequent when diarrhea is present. The presence of a sausage-shaped tumor in the right iliac region is a valuable sign. It appears, disappears, and changes its shape and position during paroxysms of pain brought on by peristalsis. These peristaltic waves seem to travel beneath the abdominal wall, produced

by the activity of the intestines, are known as "patterns." Abdominal tenderness is usually absent except over site of tumor. Temperature is almost usually subnormal or normal. A temperature of 100 practically excludes obstruction before the onset of a peritonitis. Pulse is usually fast and weak, depending on amount of shock. Treatment is surgical early and before the onset of peritonitis. If operation is done before adhesions have taken place, the invaginated portion may be extracted, mesentery stitched up and a cure produced. If adhesions are strong or irreducible, or gangrene is present, then a resection must be done.

I wish to make short mention of three cases operated on during the past year. One was a little child 2½ years of age. The intussusception had existed for eight days, involving twelve inches of ileum about two feet above ileocaecal opening. The bowel was gangrenous and resection and end to end anastomosis with Murphy button was done. Button passed on ninth day and had a speedy recovery.

The other cases were in adults, both coming to me since the first of February of this year. I make mention of this because they are the only cases of intussusception in grown people that I have ever seen, though I have read several reported cases.

Cecil Hurley, a high school boy in Memphis, 18 years of age. Negative family and personal history. On February 8, 1917, suffered with abdominal cramps, nauseated and vomited. Was in bed for three or four hours that morning, but got up and went to town in the afternoon. Felt some discomfort in the abdomen all the afternoon. On the 9th of February he still had some uneasiness in abdomen, but went to school. On the 10th, vomited two or three times and bowels moved twice. On the 11th, pain was intense, vomiting and passing blood from the bowels. Temperature now was subnormal, and a typical picture of intussusception was present. An immediate operation was then done. An intussusception of the ileum, 18 inches of the bowel being gangrenous, situated about two feet above the ileo-caecal juncture, was resected, end to end anastomosis was done with

Murphy button. Button passed on the tenth day after operation. Recovery was complete in three weeks.

We can often learn more from some of our failures and my other case resulted in death. This was John Anderson, colored, Keeling, Tenn., referred to me for operation on May 12, 1917. He was 42 years of age, a farmer, and had enjoyed good health until June, 1916, when he had a spell of colic, vomiting, tympanites, locked bowels for four days, but with the use of enemata was relieved. Had two or three milder attacks during the fall. In January, 1917, had another severe attack and was in bed for a week. From this time on he was never free from discomfort in the abdomen, but kept at work until the 1st of May, when he was taken with a violent attack, passed blood and mucus from the bowel and had all the symptoms of obstruction, with persistent hiccough. From May 1st to the 12th, he had lost about 20 pounds in weight. A large mass extending from just below the liver on the right side to a point half way between the crest of ileum and the umbilicus on the left, which would rise up against the palpating hand during paroxysms of pain. Over other portions of the abdomen patterns were plainly noticeable, was suffering with considerable tympanites, had an anxious, drawn expression of the face, bloody stools, subnormal temperature, $97 \frac{1}{5}$, pulse 110. Operation was performed May 12, a resection of an intussusception consisting of a portion of ileum, caecum, appendix, ascending, transverse and descending colon. Lateral anastomosis by suturing was done. Patient lived eight days. His pulse was fast after operation, running as high as 122 for the first twenty-four hours, when it gradually came down to 90, and varied from 90 to 100 for one week. Temperature ranged from $97 \frac{3}{5}$ to 99. Bowels moved on fifth day. But hiccough was persistent, never being able to take any nourishment without bringing on severe attacks. So it seemed the hiccough and starvation were the causes of death in this case.

DISCUSSION.

DR. O. H. WILSON: Intussusception among

adults is a very rare thing. The prognosis and diagnosis is different in adults and children. A child could not stand surgery as in the last case reported. The classical types of intussusception are not always present. In my experience it occurs in breast-fed babies who have severe pain, a dose of oil is given and next day blood is present in the stools, which is sufficient for diagnosis. The oil, of course, made it worse. I would emphasize that a pain in the belly should never be treated by oil or other purgative. Intussusception in a child under two years is serious, but the operation in the early stages is simple. A purgative quickly sets up gangrene by pushing the bowel further in. I regard the death rate of intussusception as a doctor's rather than a surgeon's success or failure, as it depends on promptness of diagnosis. If resection is necessary under one year. The percentage of recovery is in proportion with prompt diagnosis. If a baby is taken with sudden colic and not relieved with paregoric, do not give a purge, and later if a bloody stool shows up it should be recognized. Ileocolitis does not have bloody stools so soon. These cases have temperature. So I put in a plea for early recognition of the condition. Do not order a purge over the 'phone, rather always make a thorough examination in every instance.

DR. L. E. BURCH: Dr. Clary has brought before us a most important subject, one that is more important to the general practitioner than to the surgeon, for if the practitioner fails to recognize the condition early, the surgeon will not do any good. Dr. Clary is to be congratulated on his good record in three cases, as the mortality is very high, and if one can save two-thirds he is doing good work. There are many elements to be remembered in the diagnosis of intestinal obstruction.

The symptoms are usually well defined. First, there is a severe abdominal pain, following which we have nausea and vomiting. One point which is very important is that where the pain is necessary the mortality is very high, most especially comes first and then the vomiting, the condition is serious, such as obstruction, appendicitis, gall stones, etc. In obstruction in the early stages the temperature is subnormal, which is very important. Also there is a leucocytosis in the early stages. Intussusception is usually found in the young; it is very rare in the adult. As to treatment, never give a purgative in a case of abdominal pain. It is best not to give an opiate until a diagnosis is made. If you cannot control the pain, use apomorphine instead of morphine, giving $1/40$ grain every ten or fifteen minutes until thoroughly relaxed so that the symptoms will not be disguised. Early operation is necessary. These children are taken with pain and a bloody stool in a short time. Make a careful examination of abdomen for a tumor. Another impor-

tant point is a rectal examination. I remember a case of a baby six months old with pain and bloody stool and after a careful examination a tumor was found. In three or four hours operation was done and a splendid recovery made. If operation had been delayed the patient would have been lost, as children can stand but very little surgery. I emphasize a careful examination, no purgatives, and do not disguise symptoms with an opiate.

DR. W. H. WITT: In the cases I have seen I have felt of the diagnosis from this circumstance: The child is relaxed and you begin to talk over the history with the parents and child begins to have pain, squirming and straining, relaxes again, and this process is repeated. This is practically diagnostic of intussusception.

DR. CLARY (closing): I appreciate very much the discussion given this paper and can only add that the first case I ever saw was brought in by Dr. Wilson after an early diagnosis. The parents would not consent to an operation and the child died. The specimen was removed and the child had a double invagination. This subject appeals to me especially on account of the most beautiful pathology, which can be so easily remedied by early operation.

LEFT-SIDED APPENDICITIS*.

By Jere Lawrence Crook, M.D., F.A.C.S.,
Jackson.

The rarity of this condition gives to it an interest which it might not otherwise possess. It is most likely to occur in cases in which there is transposition of the viscera, and it is more frequent in these cases than other conditions. Cases are reported, however, in which it was associated with other intestinal anomalies, but without complete visceral transposition. A few also have been reported where the only anomaly found was the displaced appendix.

In a paper by C. H. Mayo, in the *Medical Record*, in 1912, he states that of six cases of complete transposition of the viscera at St. Mary's Hospital, three were operated on for left-sided appendicitis; he also reports five cases of "complete failure of the cecum to leave its earliest situation on the left iliac side." Three of these were operated on for appendicitis and the appendix was found on

the left side. In one other case, operated on for gastric ulcer, a chronically inflamed appendix was removed from the left iliac fossa. In one of the three appendicitis cases a preliminary X-ray examination showed abnormal position of the colon and suggested the possibility of left-sided appendicitis. In this case a median incision was made. In the other cases the anomaly was not found until operation.

In "Surgery Gynecology and Obstetrics" for October, 1915, Dr. J. H. Schrup of Dubuque, Iowa, has an elaborate article on left-sided appendicitis, in which he gives an exhaustive review of the subject, compiled by an expert who had searched the literature, and adds a case of his own. Most cases, he states, are not recognized during life, but the reports "were made from post-mortem and dissecting room findings, and some of these were more or less vague and indefinite."

He classifies the cases "anatomically and etiologically." The anatomical classification is as follows:

Left-sided colons.

Right-sided colons.

Herniated colons.

Cecum in pelvis.

Double intestines.

Complete transposition of the viscera.

Of this last condition he says: "With a complete transposition of the viscera the appendix would be expected on the left, and the pre-operative diagnosis ought to be made in every case, as the usual general examination would disclose the heart on the right side and at once give the clew. A search of the literature of the last four or five years has disclosed some twenty-six published cases of this sort. Their number in a few years, compared with the number of other kinds of misplaced appendices reported during a period of one hundred years, makes it apparent that the latter condition must be very much more unusual than the former."

The etiological theories advanced by various authors he classifies as follows:

1. Non-rotation of the colon.
2. Retention of foetal colonic mesentery.
3. Elongated appendix.
4. Foetal inflammations causing arrested

*Read at annual meeting of Tennessee State Medical Association, Nashville, April, 1917.

development and turning of the colon.

5. Arrested descent of testicle or ovary.
6. Adhesions.
7. Other etiological theories.

Schrup's case was diagnosed as appendicitis and successfully operated, but an extended search was made for the appendix at operation, as its true position had not been determined previously. The X-ray picture with kaolin injection of the colon showed "a distinct angulation of the splenic flexure with the absence of a transverse colon, while the cecum and ascending colon are in close apposition to the descending colon and sigmoid.

In addition to Schrup's report, the following cases of left-sided appendicitis have been reported:

Case, J. T.—Left-Sided Appendicitis. *Amer. Journ. Roentgenol.* 3:332 (1916).

Christie, G. W.—Appendicitis with the caecum on the left side. *Lancet*, 1916, 1:200.

Deaver, J. B.—Appendicitis. Philadelphia, 4th ed., 1913.

DeNancrede, C. B. G.—Occasional Presence of the Appendix Vermiformis on the Left Side of the Abdomen without Transposition of the Viscera Explained. *Journ. Mich. Med. Soc.* 13:39 (1914).

Kelly, H. A.—Appendicitis and Other Diseases of the Vermiform Appendix. Philadelphia, 1909.

Lyle, H. H.—Left-Sided Appendicitis Complicating Transposition of the Viscera. *Ann. Surg.* 63:124 (1916).

Palamountain, W. B.—Gangrenous Appendicitis on the Left Side. *Jour. Amer. Med. Assoc.* 64:1968 (1915).

St. Clair, R.—Gangrenous Perforated Appendix Situated in the Left Iliac Fossa. *Western Med. Times* 35:322 (1915-16).

Vosburg, A. S.—Non-Rotation of the Intestine; Its Relation to Aberrant Positions of the Appendix. *Ann. Surg.* 58:822 (1913).

The correct diagnosis of left-sided appendicitis is difficult; with complete transposition of the viscera, as suggested in the quotation from Schrup, the position of the heart will indicate the true condition. Where there are symptoms strongly suggestive of appendicitis, but with localization of symptoms on the left side, an X-ray picture will reveal the

abnormal position of the colon and will aid in establishing the diagnosis. In some cases the symptoms may not indicate any left-sided localization at all. In such cases, the true position of the appendix is usually not found until operation.

In the case I shall report, no preliminary X-ray picture was made, nor was there any abnormality of the heart or other viscera.

Case Report.

G. F., age 14, of Rutherford, Tennessee, was admitted to the Crook Sanatorium on December 27, 1916, and dismissed January 27, 1917.

History.

On December 16, 1916, the patient was seized with a severe pain in the left iliac region, followed with nausea and vomiting and a few hours later by fever. He was attended by Dr. Allen for two or three days, and dismissed practically free from symptoms. Five days later the symptoms recurred with more severity and Dr. Allen was again sent for, and on examination found a tumor in the left iliac region at the site of the previous pain. The tumor was tender on pressure and dull on percussion, and the temperature was above normal. Two days later patient was brought to our sanatorium, and on admission temperature was 101, pulse 120. The tumor had increased in size steadily since Dr. Allen had seen it two days before. Blood examination showed a leucocytosis of 15,000.

A tentative diagnosis was made of "Left-Sided Appendicitis and Abscess," but on account of the rarity of this condition, and on the theory of "safety first," a median incision was made. This revealed the fact that the line of adhesions extended from the middle line entirely toward the left iliac region. A second incision was then made beyond the outer border of the rectus muscle directly located. We need not despair of the future, secess containing a gangrenous appendix which had entirely sloughed off. This was removed and free drainage inserted. Patient made uneventful recovery and was dismissed one month from date of entrance.

DISCUSSION.

DR. E. T. NEWELL, Chattanooga: The reason I was so slow in rising to discuss this paper

is because I never had a case of left-sided appendicitis; therefore, I do not know anything about it. But I do appreciate Dr. Crook bringing this subject before the Association, because it is rare and we may run across a case like it in our practice at any time. I had no idea that there were so many cases reported in the literature as Dr. Crook's paper mentions. I have not run across cases in the literature.

I think Dr. Crook is to be congratulated on his success in this case, especially on his technic when he closed the median incision and then went over to the left and treated the case as an ordinary right-sided appendicitis.

I would like to ask Dr. Crook, as I may not have understood him clearly, if all of the large bowel was transposed and if the ileocecal valve and everything went in on the left side as it ordinarily does on the right, and if there was a transposition of anything else in the abdominal cavity besides the large bowel?

DR. C. N. COWDEN, Nashville: I have not had a case of appendicitis on the left side, but I operated on one patient for a strangulated hernia on the left side and the first thing that came into view was the appendix. The patient was a negro, 84 years old, who was operated on the fourth day after strangulation had occurred. There was a small slough in the end of the gut; the appendix was normal. The operation was done under local anesthesia; the old negro got well and lived quite a number of years thereafter. I did not remove the appendix. I do not know whether it can be classed as a case of left-sided appendicitis or not.

DR. CROOK (closing): I have nothing further to add except to reply to the question asked by Dr. Newell. When I found out the trouble and removed the rotten appendix, I was satisfied not to do any more surgery than I have mentioned in my paper; I did not want to break down the wall of adhesions; I was glad to get out of it as well as I did.

A DISCUSSION OF SOME OF THE CLINICAL FEATURES OF EARLY TUBERCULOSIS.

By G. F. Aycock, M.D.,
Nashville.

"The entrances are innumerable, however sole the exit." These are the words of a lay writer, himself the victim of pulmonary tuberculosis, whose case has since terminated fatally, and, though somewhat expressive of gloom, this statement sums up the general situation with reference to the advent of the

disease in a manner that would do justice to any strictly medical literature.

The propaganda of the present day is for the diagnosis of tuberculosis early, for reasons readily apparent, and is indeed a laudable one. However, in this field those who allow their rashness to rush them to an ill-founded and mistaken diagnosis do the patients incalculable harm, for the knowledge of the presence of this disease brings about a complete social and industrial revolution in the patient's life. Therefore, while an early diagnosis is highly important from the standpoint of results to be obtained by treatment, it is equally important from the patient's standpoint that this diagnosis should have a sound clinical basis.

We shall assume in this discussion that "early tuberculosis" is simply that period in which clinical history has just begun and shall not attempt to make any differentiations as to the stage or stages of the disease.

The presenting symptoms of pulmonary tuberculosis are so numerous and varied that any attempt at the discussion of all of them is likely to lead us far afield. Pottenger has made an etiological classification of the twenty-five or thirty symptoms looked upon as belonging to early tuberculosis. In this classification he divides the symptoms into three groups, as follows:

Group I.—Symptoms due to toxemia: Malaise, feeling of being run down, lack of endurance, loss of strength, nervous instability, digestive disturbances, loss of weight, increased pulse rate, night sweats, temperature, blood changes.

Group II.—Symptoms due to reflex cause: Hoarseness, tickling in larynx, cough, digestive disturbances, loss of weight, circulatory disturbances, chest and shoulder pain, flushing of face, apparent anemia.

Group III.—Symptoms due to tuberculous process per se: Frequent and protracted colds, spitting of blood, pleurisy, sputum, temperature.

It is our purpose in this paper to discuss only a few of the most often seen presenting symptoms as noted by both patient and physician. We hope we will be pardoned for using our personal experience and records as

a basis for arriving at a conclusion as to the frequency of the symptoms noted. From a personal knowledge and hospital records of eight hundred cases, we would suggest the following as the clinical manifestations most often presenting: Cough, with tickling of throat and hoarseness; digestive disturbances; recurring or protracted colds; hemoptysis; temperature and circulatory disturbances. All except the latter are taken as the most frequent manifestations which the patient may have had impressed upon him as the most striking feature of his condition, but usually further questioning would bring to his memory the existence of some collateral phenomena as malaise, easy fatiguing, nervousness, etc.

Cough. This symptom is probably the first noted by the patient in a majority of cases. He tries to explain it away by first one cause and then another till its persistence drives him to his physician. The cough from the very nature of its etiology (reflex through the laryngeal of the vagus) is of the dry, hacking type and unproductive of sputum in the beginning. This condition itself lulls the patient, and often the physician, into a sense of false security. A good percentage of cases consult the throat specialist and, the larynx being clear, the ubiquitous tonsil is often blamed and sometimes removed without bringing about the desired relief. Of course, every case of protracted cough is not tubercular in origin. We should say not a half nor even a third are so, but, on the other hand, it is safe to say that very few cases of pulmonary tuberculosis fail to show cough at some time. The cough is usually worse on assuming the reclining position, or on arising in the morning.

Tickling in the larynx and hoarseness at this stage usually have the same etiological bearing as cough. Many cases will show a tickling on the side involved. Hoarseness, in most cases, does not mean laryngeal involvement, especially early in the disease. It is said by some that persistent hoarseness in non-users of tobacco or in non-alcoholics should immediately arouse the suspicion of the existence of tuberculosis.

Digestive disturbances. Our cases have

shown this class of symptoms to be the presenting ones in a large percentage of cases. Many authors claim phthisis develops mostly in those who are bad eaters, and Grancher states: "All consumptives have been, are, or will become dyspeptics." Probably the majority of cases will show anorexia in the beginning. This anorexia may be accompanied by distention or by nausea and vomiting and it is here that we find one of our greatest obstacles to overcome in prescribing the dietary. These symptoms are by no means constant, however. The appetite may be capricious, often it is ravenous even during a febrile attack.

Gastric analyses have not disclosed any constant changes in the anatomy or functional activity of the stomach in the early stages of the disease. In some cases a hyperchlorhydria is found, in others hypochlorhydria, while in others the free and combined acids remain in about normal proportions. The gastric symptoms of early phthisis are said to be analogous to those seen in chlorosis, or in the severe anemias which cause an ischemia of the gastro-intestinal tract. However, along this line of reasoning Janowski calls attention to the fact that many tuberculous patients who show no anemia at all exhibit marked symptoms of gastric disturbance. He, therefore, concludes that these symptoms result from a localized gastric and intestinal anemia rather than a general anemia.

Pottenger in his late work stresses the importance of nervous influence on the digestive system in tuberculosis. He classifies the digestive symptoms, etiologically, under those of toxic origin and those of reflex origin. In the toxic state the sympathetic branches to the digestive system are stimulated out of proportion to the vagus and, as a result, the symptoms are those of sympathetic stimulation, namely, loss of appetite, lack of secretion, lack of motility, etc. When the toxic state passes off, the vagus action is predominant and we have the reverse state of affairs. This toxemia is, of course, more marked in advanced tuberculosis, early tuberculosis showing only slight and transient symptoms of toxemia. It is this vague predominance

that accounts for the increased appetite and other evidences of increased gastro-intestinal function often seen in early tuberculosis.

Frequent and protracted cold. Many patients will give a history of repeated colds, stating that they are easy to catch cold; that the colds are soon broken up, but the last one has held on longer than usual, the remedies formerly giving relief having failed in this one.

Whether the attacks of so-called "grippe" from which so many tuberculous patients date their clinical history are predisposing factors or are really a part of the tuberculosis, we hesitate to say, but their repeated occurrence is significant.

Hemorrhage. The patient whose disease is ushered in clinically by hemorrhage is in most cases extremely fortunate, for the majority of people will permit a cough to go on unexplained for months, while a hemorrhage will cause them to seek medical advice at once. While many tuberculous are hard to convince they have the disease, one who has suffered a hemorrhage usually accepts the diagnosis unchallenged.

Temperature. In order to more intelligently interpret temperature readings in relation to tuberculosis it is well to consider the normal temperature in the physiological variations thereof. The normal temperature is usually said to be 98.4 degrees or 98.6 degrees Fahrenheit, but these figures are in no wise absolute. In unquestionably normal persons variations will be found, depending largely upon time of day, exercise, eating and general habits or occupation. The average healthy normal individual will usually register a temperature on arising of 97.2 to 97.4 degrees F. This will gradually rise to about 98.6 by the middle of the day, and after hard work and the mid-day or evening meals, especially if heavy, the temperature may reasonably go to 99 or 99.2 degrees F., to return to normal within about one and a half hours after the meal. It will thus be seen that there is a normal variation in temperature, and this range of variation is more important to consider than an absolutely fixed normal temperature. This range in the

normal individual is usually 1.5 to 1.8 degrees F.

Physiological variations. Exercise will cause a very definite rise in temperature and the same may be said of excitement. We have found temperature as high as 100.4 degrees F. in apparently normal individuals immediately after participation in a baseball game, and a temperature as high in spectators after an exciting football game. A very hot bath may cause an immediate rise of from 1.5 to 2 degrees F. A heavy meal may cause a rise of .5 to 1 degree F. about one to one and one-half hours afterwards. These elevations of temperature are evanescent and usually will not persist for more than one to one and a half hours.

Premenstrual elevations. Nearly all women will show a slight rise in temperature just preceding menstruation. Sometimes this elevation is not seen till the period comes on or immediately following the same.

Variations in thermometers. The selection of a thermometer is a very important factor in determining accurate temperature readings. Thermometers as purchased on the market are subject to wide variations and when used as an aid in arriving at the diagnosis of a condition like pulmonary tuberculosis, where a variation of the fractional part of a degree may be of importance, they are likely to be misleading. We kept temperature records on about fifteen normal people for thirty days and found the maximum temperatures, according to a lot of new thermometers just purchased, ran all the way from 98.6 degrees to 100 degrees F. Every attempt was made to take these temperatures under normal conditions. We also found different readings on the same person by using several thermometers. For instance, one individual on whom we used four thermometers showed readings of 98.6, 99.2, 99.6 and 100. This emphasizes the importance of careful selection of thermometers and the necessity of using the same thermometer every time the temperature is taken on a given patient. Care should be taken to leave the thermometer in the mouth sufficiently long to get the maximum elevation. Under ordinary circumstances, and in a fairly warm room, at least

five minutes should elapse before removing the thermometer from the mouth; and if the patient is in a cold room or on the outside, the thermometer should be left in the patient's mouth much longer than this to get an accurate registration. It is also to be remembered that hot or cold drinks or food taken into the mouth immediately preceding will influence the temperature registration, and it is well to be sure the patient has had nothing to eat or drink for at least thirty minutes preceding the time of taking the temperature. Inasmuch as the mouth temperature is subject to many extraneous influences, it is more desirable, where circumstances will permit, to take the temperature per rectum. It is to be borne in mind that the rectal temperature is from .05 to 1 degree higher than mouth temperature.

Elevation of temperature is probably the first clinical finding in tuberculosis, and is one of the most constant findings. The elevation of temperature is likely the result of absorption of non-tuberculous toxic protein substances, as well as the bacillary toxins. Probably it is safe to assert that no active tuberculosis exists without fever. Cases may be reported with apparent normal temperatures throughout, but readings in such cases may be due to a breach in technique of taking the temperature, or the patient's normal temperature may be low. In the latter cases the diurnal variation in temperature will be of assistance in interpreting the readings.

In early tuberculosis, toxemia is not marked, and we must assume the active area is not extensive, so that no marked persistent elevation of temperature is to be expected (except, of course, in the rapidly progressing types). The maximum elevations usually are after midday, except in the so-called reverse type, showing highest temperature in the morning, which usually is interpreted as a bad prognostic sign. The average early case very likely will show no elevation in the forenoon, so that readings taken only at this time would, in most cases, be absolutely valueless from a diagnostic standpoint. Some cases will show the maximum elevation early in the afternoon, others in the late afternoon,

and still others as late as 8 or 9 o'clock. Each case usually shows its maximum elevation at about the same time every day, provided no departure is taken from the regular habit routine. This maximum level may not be maintained over two or three hours, especially if no vigorous exercise is taken, and the temperature may soon drop back to normal. Hence a b. i. d. or a q. 4h. temperature chart may fail to show the abnormal elevation, whereas if the temperature is taken every two hours, the elevation will be detected. After the hour of maximum temperature is determined, a q. 4h. chart, so arranged that one reading is at this hour, will show the maximum elevation.

Often a patient showing other phenomena of early tuberculosis, whose temperature shows no elevation, will be made to register an abnormal temperature by walking a mile or two, or by vigorous exercise of other description. Such an elevation will differ from a physiological elevation in that the former will persist for some time, while the latter disappears within a very short time after rest is established. Temperature elevations may be found on several successive days with intermissions in which there will be several days of normal temperature.

Due allowance must be made for the physiological premenstrual rise when the female patient is under consideration; also for the fact that the nervous element in the woman may influence the temperature reading to some extent.

Circulatory Disturbances. It is usually understood that the rapid pulse is typical of tuberculosis, but probably the situation is covered better by stating that the unstable pulse is typical. Circulatory disturbances are for the most part toxic in origin, and it is during the "waves" of toxemia that the pulse is most unstable. The pulse rate may be normal at rest, but the slightest exertion will induce a marked rapidity and irregularity of the pulse. This instability is explained on the assumption that the sympathetic system receives the brunt of toxic stimulation, and that vagus action is not felt in the face of this overwhelming sympathetic stimulation.

SERVICE CONDITIONS IN MEDICAL RESERVE CORPS.

The following is taken from the "Official Bulletin," which is issued daily from the Government press at Washington, under date of August 15, 1917. It contains more real information than we have been able to find in any like space elsewhere and is presented to our readers with the belief that it will answer several questions which have come into their minds.

The subcommittee on ophthalmology and oto-laryngology of the general medical board, Council of National Defense, in reply to inquiries from physicians, has sent the following:

Dear Doctor: In reply to your letter of inquiry, the subcommittee on ophthalmology and oto-laryngology refers you to the following:

1. Officers of the Medical Reserve Corps who have specialized in medicine or surgery will be given an opportunity to perform the duties of their specialty when feasible, men of larger experience naturally being given preference.

2. In the Medical Reserve Corps there are three grades, viz., lieutenant, captain, and major. It is the policy of the Surgeon General's Office to recommend the great majority of applicants for commission in the grade of first lieutenant, with the expectation of making numerous promotions when the officers concerned have had an opportunity to demonstrate their professional qualifications and their adaptability to the military service after a reasonable period of active duty. Applications for increased grade are not favorably considered unless they come through military channels, in order that the Surgeon General may have the benefit of the recommendations made by the applicant's superior officers. Political influence is unnecessary.

The Chief Considerations.

In making recommendations for original commission, age, professional attainments, and previous military experience are the chief considerations in determining the grade in which the applicant should be commissioned.

3. The pay of the different grades is: First lieutenant, \$2,000; captain, \$2,400; major, \$3,000.

When assigned to duty in a city (not in camp, thus not serving with troops) the assignment carries with it commutation of quarters: First lieutenant, three rooms; captain, four rooms; major, five rooms; at \$12 per room, heat and light additional.

4. Acceptance of a commission in the Medical Reserve Corps automatically places your services at the disposal of the Surgeon General wherever he deems them most valuable, either in the United States or abroad.

Commissioned for Five Years.

5. Acceptance of commission is for five years, unless sooner relieved from active duty on recommendation of the Surgeon General, when officers will be placed on the inactive list. Active duty in the present instance will naturally be for the length of the war plus four months, which will be required for the necessary physical examinations to be made of the men before they are discharged from the army. The old requirement of three years' service, including at least 90 days' active service before being eligible for promotion, has been eliminated.

6. In case of death from causes in line of duty, the Government pays to the widow or designated beneficiary six months' pay of the grade held by the deceased at the time of death. The deceased's family is also entitled to a pension.

7. The limited number of quarters at the majority of stations and camps makes it inadvisable for officers of the Reserve Corps to be accompanied by their families unless they can provide for them independently.

8. In no event will the families of officers be allowed to accompany them abroad.

9. Officers in the Medical Reserve Corps under the age of 45 years will be called for training in the medical officers' training camps. This is for the purpose of giving intensive training in administrative duties, a requirement for military service. Men over 45 years, if they so elect, may attend a medical officers' training camp. If a surgeon has had military training, he may be called, without camp instruction, for active duty.

Suggestions by Surgeon General.

The following paragraphs are added from a letter from the Surgeon General to the chairman of the State committees of the medical section, Council of National Defense:

"1. It is believed that it would be of great advantage to this department if each State committee would make a census of its State, with a view of dividing the medical profession into two classes: (a) those who cannot be spared for army service because of their importance to the civil community, and (b) those who can be spared. Class (a) should be requested to refrain from offering their services. Class (b), on the contrary, should be encouraged promptly to apply for appointment. This office is frequently called upon to give advice along these lines in individual cases, but the department does not care to assume this responsibility, believing as it does that the question is one that can much better be decided by the State committee, acting in conjunction with the county committees.

"2. The department will not feel called upon to consult the list prepared under paragraph 1 when individual applications are received, since it will be assumed in all cases that the individual offering himself can be spared and will be at the disposal of the department for such duty as the exigencies of the service may demand.

"3. For the purpose of this census the State committee should act as a clearing house for the county committees.

Practice in Specialties.

"4. Frequently inquiries are made as to whether a medical officer will be assigned to duty in accordance with his medical specialty. In this connection attention is invited to the fact that a large proportion of the administrative work of the Medical Department of the newly organized army will fall upon the officers of the Medical Reserve Corps. The officers of the regular establishment are so few in number that they will be available for only the most important administrative positions. With this in mind, it will be readily understood that officers of the Reserve Corps

must largely supplement their technical knowledge by a clear conception of military co-ordination and administration before they can be of the greatest service to the department.

"5. They should offer themselves without reservation, considering their medical training as the basis upon which to build their education as medical officers.

All Cards Indexed.

"6. It is true, nevertheless, that all officers of the Reserve Corps are card indexed according to their special qualifications and that when the army is fully organized and working smoothly every effort will be made to assign each officer where his special qualifications will be most useful to the Government and where the work will be congenial to the officer himself.

"7. The department has at its command at present only about one-fourth the number of officers that will be required for an army of 2,000,000 men. By the application of the selective draft the full quota can probably be raised without great difficulty. It will be more creditable to the profession, however, to attain this end by voluntary offer of service.

"8. A great deal of inconvenience has been caused those applying for appointment in the Medical Reserve Corps by reason of the delay in issuing commissions. The business of the War Department has expanded so rapidly that it has been impossible to secure the necessary additional assistance required to handle the work. The delay has occurred in this office as well as in the office of the Adjutant General. This condition is being remedied as fast as circumstances permit.

"9. Your committee is urged to take such steps as may secure the prompt acceptance of commissions issued or their immediate return to this office."

Sincerely yours,

(Signed) SUBCOMMITTEE ON OPHTHALMOLOGY AND OTO-LARYNGOLOGY, GENERAL MEDICAL BOARD.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

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EDITORIALS**A REAL SERVICE.**

The Budget Committee of the Shelby County Court made a request of the Memphis and Shelby County Medical Society that an investigation should be made into conditions at the county hospitals and that the society should give the court the benefit of their ideas as to how the service of these hospitals might be improved. The Public Health and Legislative Committee of the medical society at once was asked to make the investigation and report back to the society and this was done. The hospital for the treatment of pellagra was found to be well conducted, considering the fact that maintenance appropriations were small. The smallpox hospital was found to be fit only for firewood. Recommendations were made to this effect: (1) That the county build a pellagra hospital on ground already owned by the county. (2) That the present pellagra hospital be renovated and used for the reception of smallpox patients. (3) That the positions of Emergency Hospital Superintendent and Hospital Physician be combined and filled by a capable physician, with a good salary. (4) That the society select a committee of three of its members, one the present chief of staff of the pellagra hospital, whose duty shall be to co-operate with the County Commissioners in carrying out the proposed plans.

One could write a book on what is contained in the above statement. The county officials of Shelby seem to appreciate the fact that the medical faculty of the county should know something about county hospitals and seem to have a deal of confidence in the medical society—all of which is as it should be in every county.

The Shelby County Society is willing to give public officials active co-operation in matters pertaining to the public health and seems to appreciate the purposes for which the society was created—all of which is as it should be in every county.

The Shelby county medical organization is alive and active, as is shown by the fact that it does things promptly and well—all of which is as it should be in every county.

Proper publicity was given to the action of the commissioners and that of the medical society in this matter—and something is going to be done about it. The people are going to be benefited and the medical society is going to gain influence and extend its usefulness to the community at large.

Now on another tack: The smallpox "hospital" was found to be like nearly all smallpox hospitals—just rotten, and a rat hole into which public money is poured to no advantage. Why have a smallpox hospital? Why have smallpox? And if smallpox, why should the county be called upon to care for it? The preventive is offered free of all cost to all citizens and is almost absolute in its efficiency.

And why a pellagra hospital? Why not an isolation hospital and a real sure-enough hospital, too? One which can be used in a modern way for the modern treatment of all diseases in which isolation is indicated? One with wards and divisions providing for the proper care of all the communicable diseases?

And then this idea that the isolation or "emergency" hospitals should be away out in the country—why? There's no good reason for it. Memphis and Shelby county—and Nashville and Davidson county, let us say—should have an isolation hospital in the city, right close by the medical school. Such an one, built on modern lines and properly conducted on a modern basis, would efficiently serve a larger number of patients, would protect the public health, and would furnish opportunity for teaching students and doctors much that they are not now well taught about the nature of communicable disease and its treatment, and, in addition to all this, would be a powerful agency for the education of the

public in matters pertaining to disease prevention.

The Shelby County Medical Society, we dare say, looks at this matter as we do, but knows what can be done and what cannot be done in the light of present public opinion. In rendering the service described in the first part of this writing, however, they have opened the gates of opportunity and placed themselves in position to be called upon for future advice and co-operation. The call will come, they will respond, promptly and intelligently, and Shelby county will be finally provided with the right kind of hospital, with a staff of the right kind of doctors. All of which will help the score of medical organization.

REPORTED IN AUGUST.

The following names of members have been reported to the Secretary for enrollment since the last Journal was issued. The total enrollment for this year, on August 31, was 1,550, just three less than on the corresponding date of 1916.

Dr. W. G. Casenberg, N. Gay St., Knoxville; Dr. O. W. Rogers, Holston Bank Bldg., Knoxville; Dr. J. V. Jordan, Kingsport; Dr. H. P. Spencer, Burns; Dr. J. F. Hunt, R. F. D. Tennessee City; Dr. J. A. Venable, White Bluff; Dr. R. A. Douglas, Huntington; Dr. L. L. Duncan, Hollow Rock; Dr. B. E. DeLozier, Townsend; Dr. W. M. Bishop, Alcoa.

There are yet many others who should be "in." Let's get 'em.

EAST TENNESSEE MEDICAL ASSOCIATION.

The regular semi-annual meeting of the East Tennessee Medical Association will be held at Johnson City on October 11-12, 1917. Dr. J. M. Clack, Rockwood, is President; Drs. E. T. West and W. P. McDonald are the Vice-Presidents, and Dr. W. N. Lynn, Knoxville, is the Secretary-Treasurer.

Drs. J. A. Witherspoon and Perry Bromberg, Nashville, will be the invited guests of the Association and will present papers. It is thought that the general program will be full and a large attendance is looked for.

Members who desire to have a place on the program should communicate at once with Dr. W. N. Lynn, Secretary.

MIDDLE TENNESSEE MEDICAL ASSOCIATION.

The regular fall meeting of the Middle Tennessee Medical Association will be held at Tullahoma on November 22-23 under the presidency of Dr. B. T. Nolen, Franklin. The Secretary, Dr. Jack Witherspoon, Doctors' Building, Nashville, is already at work on the program. Members who wish to present papers should write to Dr. Witherspoon and give him the titles of papers to be read. The spring meeting of this society, held at Fayetteville, was a splendid success in every way. The coming meeting should be as good. Tullahoma is on the main line of the N. & C., has plenty of trains, a good hotel and everything else that goes to make a good meeting-place for a medical society.

TENNESSEE IN THE MEDICAL RESERVE CORPS.

The following list contains the names of 243 Tennessee physicians accepted for service in the Medical Officers Reserve Corps, U. S. A., to whom commissions have been sent for formal acceptance up to August 18, 1917. Several others whose names are not in this list have been accepted since that date, but these are not available for publication at this time.

It appears, from the best information we can secure, that approximately one hundred additional medical officers must be secured in Tennessee to make up the state's full quota. They will offer—we have no doubt, for it's Tennessee's way to send her full share.

There will be none better from any state in the medical service of the Army than those whose names appear in this list.

Leon D'Casto Cotton, Alexandria	-----1st Lieut.
William Ross Arrants, Athens	-----1st Lieut.
E. Covocia Maxwell, Bearden	-----1st Lieut.
David Tarwater Austin, Bogota	-----1st Lieut.
William Herman Ballard, Western Hospital for Insane, Bolivar	-----1st Lieut.
Edwin Wesley Cocke, Western Hospital for Insane, Bolivar	-----1st Lieut.
William Claude Sain, Bolivar	-----1st Lieut.
Eustace Cosmo Mason, Bon Air	-----1st Lieut.
William Rice Booher, Bristol	-----1st Lieut.
Thomas Crowder Chapman, Brownsville	-----1st Lieut.

Clarence Morgan Closter, Brownsville_1st Lieut.
 William Kenneth Edwards, Center-
 ville -----1st Lieut.
 Jackson Herman Barnett, Chattanooga__Captain
 Jesse Cleveland Eldridge, E. Chatta-
 nooga -----1st Lieut.
 Harry Q. Fletcher, Chattanooga_____1st Lieut.
 Emmett Merrick Harrison, Chatta-
 nooga -----1st Lieut.
 Eugene R. Hochstetter, Jr., Chatta-
 nooga -----Captain
 Albert Thompson Ingalls, Chatta-
 nooga -----1st Lieut.
 Samuel Herman Long, Chattanooga__1st Lieut.
 Ray Morrison Means, Chattanooga__1st Lieut.
 James D. L. McPheeters, Chattanooga_1st Lieut.
 Gilbert Haldren Roberts, Chattanooga_1st Lieut.
 George Francis Ryan, Chattanooga ___1st Lieut.
 Leopold Shumacker, Chattanooga ___1st Lieut.
 John Black Steele, Chattanooga_____1st Lieut.
 Davis King Summers, Chattanooga__1st Lieut.
 Carl August Gunner Sundstrom, Chat-
 tanooga -----1st Lieut.
 Matthias Miller Wagner, Chattanooga_1st Lieut.
 Guy McClellan Reesor, Church Hill___1st Lieut.
 Edward Barker Ross, Clarksville____1st Lieut.
 William Holler Brandau, Clarksville__1st Lieut.
 Dabney Minor, Cleveland -----1st Lieut.
 Walter A. Bell, Cloverdale_____1st Lieut.
 John Samuel Miller, Collierville____1st Lieut.
 Percy Dake Biddle, Columbia_____1st Lieut.
 Paul Hamlin Faucett, Columbia_____1st Lieut.
 Lucius Hough Gilmore, Columbia____1st Lieut.
 Alfred Smithwick Horsley, Columbia__1st Lieut.
 Robert Pillow, Jr., Columbia_____1st Lieut.
 Benjamin Franklin Davis (col.), Co-
 lumbia -----1st Lieut.
 Otey James Porter, Columbia_____Captain
 Charles Hendley, Cottage Grove_____1st Lieut.
 John Hartwell Marable, Cowan_______Captain
 Ellis LeRoy Wilkins, Dyersburg_____1st Lieut.
 Guy Collins Anderson, Eads_______1st Lieut.
 Green Warren McConathy, Eads_____1st Lieut.
 Snethen Burroughs Duggan, Eagle-
 ville -----1st Lieut.
 Wendell Phillips Baugh, Elkton_____1st Lieut.
 Robert Raymond Sellers, Erwin_____1st Lieut.
 Joseph R. McCrary, Fall Branch_____1st Lieut.
 Boone E. Noblett, Fayetteville_____1st Lieut.
 William Earl Boyce, Flatwoods_______1st Lieut.
 John Wilson Frost, Fruitland_____1st Lieut.
 Daniel Bonaparte Cliffe, Franklin____Captain
 Beverly Toone Nolen, Franklin_____1st Lieut.
 Homer Reese, Gallatin -----1st Lieut.
 Russell Bate Wilson, Gates_____1st Lieut.
 John Crundy Seay, Germantown_____1st Lieut.
 Charles Douglas Walton, Gordonsburg_1st Lieut.
 William Winfred Winters, Greenbrier_1st Lieut.
 Walter Lee McCaleb, Hillsboro_____1st Lieut.
 James Henry McCall, Huntingdon____Captain

Clyde Crawford Hardison, Iron City___1st Lieut.
 Benjamin Clayton Arnold, Jackson___1st Lieut.
 John Taylor Barbee, Jackson_______Captain
 Dorsey D. Cranberry, Jackson_____1st Lieut.
 Fleming James O'Connor, Jackson____1st Lieut.
 Wm. Gilchrist Saunders, Jackson____1st Lieut.
 Justin Ernest Lacy, Jasper_______1st Lieut.
 Llewellyn Moore Dykes, Johnson City_1st Lieut.
 Aubin Tilden King, Jefferson City___1st Lieut.
 John David Carr, Knoxville_____1st Lieut.
 Harley Leland Acuff, Knoxville_____1st Lieut.
 Herbert Acuff, Knoxville_______1st Lieut.
 Daniel W. Crawford, Knoxville_____1st Lieut.
 Claude A. Frazier, Knoxville_____1st Lieut.
 Edgar Sharon Turner, LaFollette____1st Lieut.
 Dorsey Thomas Gould, Lawrenceburg_1st Lieut.
 Gid Malcolm Hall, Lenoir City_____1st Lieut.
 William Dave Cagle, Lobelville_____1st Lieut.
 James Clagett Fly, Lyles_______1st Lieut.
 Wilbur Monson Blackshare, Lucy____1st Lieut.
 Charles Briggs Crittenden, Madison__1st Lieut.
 Richard Nobley Little, Martin_______1st Lieut.
 Sam Wright Donaldson, Maryville____1st Lieut.
 Fred Oscar Stone, Maynardville____1st Lieut.
 James Stirling Skaggs, Maynardsville_1st Lieut.
 Polk Duncan Brown, McMinnville____1st Lieut.
 Ernest Lynne Anderson, Memphis____1st Lieut.
 Pyatt Halstead Anderson, Memphis__1st Lieut.
 William Happ Baldwin, Memphis_____1st Lieut.
 Clarence Angelo Bell, Memphis_____1st Lieut.
 Clyde McKay Beck, Memphis_______1st Lieut.
 Charles Alexander Bender, Memphis__1st Lieut.
 Charles Decatur Blassingame, Mem-
 phis -----1st Lieut.
 Leslie Turner Bolton, Memphis_____1st Lieut.
 Louis Frank Boyd, Memphis_____1st Lieut.
 William Ausborn Brewer, Memphis__1st Lieut.
 Stanley Needham Brinson, Memphis__1st Lieut.
 Charles Walter Brown, Memphis_____1st Lieut.
 George Lem Brown, Memphis_______1st Lieut.
 Kinsey Mansfield Buck, Memphis____1st Lieut.
 William Augustus Carnes, Memphis___Captain
 Grover Carter, Memphis_______1st Lieut.
 Arthur Ferdinand Cooper, Memphis___1st Lieut.
 Thomas Nelson Coppedge, Memphis___1st Lieut.
 Thomas Francis Coughlin, Jr., Mem-
 phis -----Captain
 Leonard Andrew Crosby, Memphis____1st Lieut.
 John Wesley Cunningham, Memphis__1st Lieut.
 Louis Willoughby Desprez, Memphis__1st Lieut.
 James Estelle Dunlap, Memphis_____1st Lieut.
 Max Kaplan, Memphis -----1st Lieut.
 Edward Coleman Ellett, Memphis____Major
 James Surran Fleming, Memphis_____1st Lieut.
 Samuel Evander Frierson, Memphis__1st Lieut.
 Edwin Cyril Gillespie, Memphis____1st Lieut.
 Clarence Hays Glover, Memphis_____1st Lieut.
 Roy Granberry, Memphis -----1st Lieut.
 John Philipe Henry, Memphis_____1st Lieut.
 Sherman Booker Hickman, Memphis___1st Lieut.

Joel Jones Hobson, Memphis-----1st Lieut.
 Orlando Waldo Hodge, Memphis-----1st Lieut.
 Thomas Harkins Ingram, Memphis----1st Lieut.
 Joseph Edward Johnson, Memphis----Captain
 Lawrence Larry Keller, Memphis-----1st Lieut.
 Charles Coeffield King, Memphis-----1st Lieut.
 Louis Levy, Memphis -----1st Lieut.
 William Battle Malone, Memphis----Major
 Hiram Bradford Mann, Memphis-----1st Lieut.
 Robin Ferguson Mason, Memphis-----1st Lieut.
 John Lucius McGehee, Jr., Memphis---Captain
 Bernard Cornelius McMahon, Memphis.Captain
 Leon Leopold Meyer, Memphis-----Captain
 James Patrick Owens, Memphis-----1st Lieut.
 Edward Clay Mitchell, Memphis-----Captain
 Arthur Russell Porter, Jr., Memphis--1st Lieut.
 Charles Thomas Richardson, Memphis--1st Lieut.
 Joseph Eathner Robinson, Memphis--1st Lieut.
 Lisle Benj. Robinson, Memphis-----1st Lieut.
 James R. Roohan, Memphis-----1st Lieut.
 Walker Lee Rucks, Memphis -----1st Lieut.
 Abner Potts Hubert Saeg, Memphis---1st Lieut.
 Curtis R. Senter, Memphis-----1st Lieut.
 Benj. Lucky Schoolfield, Memphis ---1st Lieut.
 John Joseph Shea, Memphis-----1st Lieut.
 Frank D. Smythe, Memphis-----Major
 Wm. Glassell Somerville, Memphis----Captain
 Marcus Gustavus Spingarn, Memphis--1st Lieut.
 James Butt Stanford, Memphis-----1st Lieut.
 Lee Alexander Stone, Memphis-----Captain
 Charles Kincaid Summers, Memphis--Captain
 Walter Thomas Swink, Memphis-----Captain
 James Rodefef Thomas, Memphis-----1st Lieut.
 Edward Gilmer Thompson, Memphis--1st Lieut.
 Robert B. Underwood, Memphis-----1st Lieut.
 Louis Francis Verdel, Memphis-----1st Lieut.
 Frank Cady Venn, Memphis-----1st Lieut.
 Howard Lombard Walker, Memphis---1st Lieut.
 Edwin Dial Watkins, Memphis-----Captain
 Llody Elmer Dyer, Midway-----1st Lieut.
 Cornelius O. Bailey, Nashville-----1st Lieut.
 Roy Wallace Billington, Nashville---1st Lieut.
 Richard Alexander Barr, Nashville---Major
 James Brew, Jr., Nashville-----Captain
 Emmett Ezra Brown, Nashville-----1st Lieut.
 Robert Ratze Brown, Nashville-----1st Lieut.
 George Washington Bugg (colored),
 Nashville -----1st Lieut.
 Rufus Herve Becote (colored), Nash-
 ville -----1st Lieut.
 Lucius E. Burch, Nashville-----Major
 Jere Witherspoon Caldwell, Nashville.1st Lieut.
 Maurice L. Connell, Nashville-----1st Lieut.
 William Clarence Dixon, Nashville---Captain
 Henry Lightfoot Douglass, Nashville--1st Lieut.
 Roy Archie Douglass, Nashville-----1st Lieut.
 Frank Bumposs Dunklin, Nashville---1st Lieut.
 Howard Merchant Francisco, Nashville.1st Lieut.
 Ernest Mitchell Fuqua, Nashville-----1st Lieut.
 Thurman Boyd Givan, Nashville-----1st Lieut.
 William Bell Goddard, Nashville-----1st Lieut.
 David Albertus Gregory, Nashville----1st Lieut.
 Fleetwood Gruver, Nashville-----1st Lieut.
 Wm. David Haggard, Nashville-----Major
 John E. Hall, Nashville-----1st Lieut.
 Albert Wynne Harris, Nashville-----Captain
 Sterling Buchanan Hinton, Nashville--1st Lieut.
 William Gillian Kennon, Nashville---1st Lieut.
 James Claude Kimbrough, Nashville--1st Lieut.
 Leon Martin Lanier, Nashville-----1st Lieut.
 John Henry Lassiter, Nashville-----1st Lieut.
 John Henry Lassiter, Nashville-----1st Lieut.
 Jesse Leonidas Leach, Nashville-----1st Lieut.
 John Moore Lee, Nashville-----1st Lieut.
 John Owsley Manier, Nashville-----1st Lieut.
 Wm. Robert Manlove, Nashville-----1st Lieut.
 Isaiah Herbert Martin, Nashville---1st Lieut.
 William Michael McCabe, Nashville---Captain
 Matthew Charles McGannon, Nashville.Major
 Frank McClinton (colored), Nashville.1st Lieut.
 Thomas Dempsey McKinney, Nashville.1st Lieut.
 Edwin Evans Miller, Nashville-----1st Lieut.
 Thomas Albert Mitchell, Nashville---1st Lieut.
 Eugene Moore Orr, Nashville-----1st Lieut.
 John Overton, Nashville -----Captain
 Joseph Ward Russell, Nashville-----1st Lieut.
 William Asa Shelton, Nashville-----1st Lieut.
 Harrison H. Shoulders, Nashville-----1st Lieut.
 Joe Harold St. John, Nashville-----1st Lieut.
 Holland McTyeire Tigert, Nashville---Captain
 Henry Harvey Walker (colored), Nash-
 ville -----1st Lieut.
 Lee Edward Welker, Nashville-----1st Lieut.
 George Cuthbert Williamson, Nash-
 ville -----1st Lieut.
 Wm. Henry Witt, Nashville-----Major
 Thomas Volney Woodring, Nashville--1st Lieut.
 Cleveland Payne, Oakland-----1st Lieut.
 James Carter, Obion-----1st Lieut.
 Francis Marion Boyatt, Oneida-----1st Lieut.
 George Randle McSwain, Paris-----1st Lieut.
 Joseph Richards Skelton, Petros-----1st Lieut.
 James Matthew Oliver, Portland-----1st Lieut.
 Joe Bradford Wright, Pulaski-----1st Lieut.
 William Aaron Cashion, Puryear----1st Lieut.
 Robert Bailey Griffin, Ridgeley-----1st Lieut.
 Willis Socrates Alexander, Ridgeley--1st Lieut.
 George Edward Wilson, Rockwood----1st Lieut.
 Granville Inman Walker, Savannah---1st Lieut.
 R. M. Kirby-Smith, Sewanee-----Major
 Samuel Shaw Moody, Shelbyville----1st Lieut.
 Ernest White Patton, Shelbyville----1st Lieut.
 John Orr Boals, Somerville-----1st Lieut.
 John W. Morris, Somerville-----1st Lieut.
 Lonnie Otto Wilkerson, Somerville---1st Lieut.
 Jere Williams Kirkpatrick, South Pitts-
 burg -----1st Lieut.
 Claude Melnotte Banks, Springfield---1st Lieut.
 Frederick Wilson Lee, Springfield---1st Lieut.
 Harry Edgar Hall, St. Joseph-----1st Lieut.
 Edward Sarter Stewart, Summertown--1st Lieut.
 Tate Benton Collins, Trezevant-----1st Lieut.

Joseph Peter Delaney, Triume-----1st Lieut.
 Robert Lee Dossett, Tullahoma-----1st Lieut.
 Charles Marion Griffith, Tullahoma---1st Lieut.
 Harry Stoll Mustard, Union City-----1st Lieut.
 George Elmer Horton, Wartrace-----1st Lieut.
 Thomas Whitson Rhodes, Whiteville--1st Lieut.
 Henry Osgood Anderson, Williamsport-1st Lieut.

THE MEDICAL PROFESSION OF AMERICA MUST SUPPLY ITS QUOTA OF DOCTORS FOR THE ARMY.

In round numbers, there are about 150,000 physicians listed in our medical directories. Deducting from this number 50,000 names of those who are not in practice or are physically incompetent, there are 100,000 doctors that should be available. Of this number the Surgeon General's Office requires 20,000, or one-fifth of the active practitioners, as officers in the Medical Reserve Corps of the United States Army.

The unfounded and possibly maliciously circulated reports of the casualties among the medical profession in the armies abroad have deterred many from applying for commissions. In reality the number killed on the entire western front from the beginning of the war to June 27, 1917, a matter of three years, was 195.

The lowest commission offered a doctor is first lieutenant, which draws in pay \$2,000 a year; captains receive \$2,400, and majors \$3,000. The cost of equipment is about \$150 to \$175, according to the desires of the individual. As in civil life, some of us are satisfied with a \$25 suit of clothes while others pay \$50, and this applies to a medical officer in purchasing his outfit in the way of uniforms, blankets, etc.

The individual outlay when once in the service is principally your expenditure for food, or mess as it is called in military circles, and this will average about \$25 a month, or about \$300 a year, meaning that a first lieutenant should have at the end of the year, or to send home to his family or bank, about \$1,700, a captain about \$2,000, and a major at least \$2,500.

While this information is of interest to those contemplating applying for commissions in the Medical Reserve Corps, the fact remains that in America we have more than a sufficient number of doctors to adequately

supply the demand of the Surgeon General's office without hardship to the civilian population.

The need of doctors is not alone for the mobile army, but also in concentration camps, evacuation hospitals, base hospitals, and on transports. It is of decided advantage to volunteer your services and receive the benefit of the very necessary training accorded physicians in medical training camps. It is a safe assumption that for those who receive such training and show their aptitude for the service, advancement will be rapid.

Applications for commissions in the Medical Reserve Corps will be found printed in medical journals or will be sent to you by your Local Examining Board or by the editor of this paper. Apply for your commission now. **Your country needs you.**—Bulletin of American Medical Editors' Association.

AMERICAN WOMEN'S HOSPITALS.

The War Service Committee of the Medical Women's National Association has organized the American Women's Hospitals for work at home and abroad. The Surgeon General of the Army and the General Director of the Department of Military Relief of the American Red Cross have approved the provision made for service to the army and to the civil population. The work will be officially part of the medical and surgical service of the American Red Cross.

The scope of the plan is a broad one. It includes units for maternity service and village practice in the devastated parts of the Allies' countries and hospitals run by women for service there as well as for the United States army in Europe. In this country acute and convalescent cases will be treated in hospitals equipped for the purpose; soldiers' dependents will be cared for, interned alien enemies will be given medical aid and substitutes will be provided to look after the hospital service and the private practice of physicians who have gone to the front.

The first units hope to go to France and to Serbia in the early fall.

Headquarters have been established at 637 Madison Avenue, New York City. Dr. Rosalie Slaughter Morton is Chairman of the War Service Committee.

ARMY PHYSICIANS' LEASES.

The Chicago Rotary Club has a committee at work on a movement intended to secure the cancellation of unexpired leases of physicians called into service in the army. This committee has written to some 20,000 physicians in all parts of the land, seeking information concerning all such leases and the Chicago Rotary Club intends to carry the thing through, even to seeking action at the hands of Congress. Whatever the outcome may be, the Chicago Rotary Club deserves the unstinted thanks of the medical profession for this effort to help the physicians of the country who would serve in the medical corps of our army.

In Nashville and in other Tennessee cities we have heard of corporations and individuals owning property refusing to cancel leases on offices rented to physicians. We have also heard of landlords, one of them a very prominent surgeon of Nashville, who stand ready to tear up any rent contract in force with a physician who is going to the training camp or to the front. This is matching patriotism with patriotism. The less said of the grabbers who insist on having their money, the better.

The letter of the Physicians' Lease Committee of the Chicago Rotary Club follows:

August 18, 1917.

Dear Doctor:

The Chicago Rotary Club has learned that a great number of physicians, who have enlisted for service during the present war, are embarrassed by unexpired leases. In certain cases, such corporations from whom they rent have refused to cancel leases. It seems to the Chicago Rotary Club that when physicians are so much needed in the United States army, every effort should be made to relieve them of contracts rightfully binding in times of peace, but which might better be waived in times of national peril.

We all know that the physician giving up an established practice to enlist makes perhaps the biggest sacrifice of us all, because his business depends absolutely on personal contact. The day he leaves, his business ceases. But his lease goes on. Yet our country is calling for more physicians, and many

patriotic doctors everywhere are trying to arrange their affairs to go.

It is possible to create a strong public opinion favoring the canceling of leases in such cases. If advisable, the matter can be carried for consideration to Congress. But first, the Physicians' Lease Committee wants figures and facts. We are sending this letter to 20,000 physicians scattered all over the United States. May we ask you personally to help us by promptly filling out and mailing back to us the enclosed postal card? Kindly do it today.

Your prompt co-operation will place in the hands of your committee the necessary data for an effective presentation of the facts before proper legislative bodies.

We want to help. We believe, in fairness to all, a great work can be done. We know that you will be glad to mail the card today. When we receive it, you will have our earnest thanks for your co-operation.

Yours very sincerely,

CHICAGO ROTARY CLUB,

R. R. Denny, Chairman.

359 East Ohio St., Chicago, Ill.

WAR MEETING FOR HEALTH OFFICERS.

A war meeting will be held at Washington, D. C., October 17-20, 1917, by the American Public Health Association. This will replace the annual meeting, which was to be held at New Orleans, La., December 4-7, 1917.

The papers and conferences will deal largely with the health problems created by the Great War—the food supply, communicable diseases among soldiers, war and venereal disease, war and the health of the civil population, etc.

President Wilson has said: "It is not an army we must shape and train for war; it is a nation." Go to the Washington meeting, then come back and do your bit.

Washington will be crowded and those interested are urged to reserve hotel accommodations at once. It will be easy to cancel reservations; but it may be impossible to obtain rooms at the last moment. Any hotel or railroad can give a list of Washington hotels.

Preliminary programs will be automatical-

ly mailed to all members of the A. P. H. A. about September 15. Non-members may receive them free by writing to the American Public Health Association, 126 Massachusetts Avenue, Boston, Mass.

INTRASPINAL INJECTIONS IN NERVOUS SYPHILIS.

BERNARD SACHS, New York (*Journal A. M. A.*, Sept. 1, 1917), remarks on the impression that the use of salvarsanized serum in the spinal canal has, since its introduction, exercised on the medical profession. He was at first one of the ardent advocates of this newer method, but his clinical experience has since taught him that the intravenous injection of salvarsan or neosalvarsan produced effects that were entirely satisfactory and at least comparable with those obtained by intraspinal injection, and, other things being equal, much the safer. Three years ago, in a research with Drs. Strauss and Kaliska, and with the assistance of as able a chemist as Professor Benedict, he found that salvarsan introduced in the usual quantities into the blood current was afterward found in appreciable quantity in the cerebrospinal fluid thus indicating that the choroid plexus is now impermeable. The facts that have come to our knowledge are first of all, as Weed has pointed out, that since pressure in the cerebral capillaries is considerably higher than the cerebrospinal tension, it is far more likely that the fluid leaves the cerebral capillaries, and circulates in the pericapillary and perineuronal spaces, and that a metallic substance like salvarsan introduced into the spinal canal does not remain in the cerebrospinal fluid for any length of time, but is rapidly absorbed into the venous system. It has been shown, also, that the cerebrospinal fluid circulates very imperfectly and that the natural course it follows is not favorable to the absorption of substances carried by the cells of the cortex. It is further known that salvarsan and its homologues are of little or no use in tabes or paresis when given by the ordinary channels, as they are not retained, but passed into the venous system. Some of the ardent advocates of the intraspinal method are beginning to acknowledge that the intraspinal treatment alone cannot reach the virus of poliomyelitis and what is true of poliomyelitis virus is also most likely true of syphilitic

virus. He thinks that laboratory workers have had a little too much to say in regard to this clinical problem, and also that in many particulars the advantages of the intraspinal method have been grossly exaggerated, and the claims of the remarkable reduction in the lymphocyte count and the Wassermann reaction, etc., have had too much influence. These changes can be brought about in a number of different ways, and there is absolutely no correspondence between them and the condition of the patient. He doubts whether any patient has been definitely cured by the treatment. Sachs gives his general impressions based on experience and finds that few or no cases of real paresis have been accurately diagnosed as thus cured, and as for tabes dorsalis, while he thinks there may be no doubt patients are satisfied with the results in many cases, it is really the meningomyelitic forms of a tabetic type that are the ones benefited most readily. In general paresis, salvarsan treatment has not helped him to bring about a cure, but in some instances it has seemed to retard the progress of the disease and caused marked remission. The problem for the future is to find some more diffusible remedy, lipid soluble and less toxic than salvarsan that would be able to pass through the blood stream into the tissues of the brain through the choroid plexus and if the neurologist and laboratory worker

One who has seen the military doctors at spirochetes wherever they may happen to be of foot and attack the spinal canal and out over the tumor, which opened up a large abscess will rationally and impartially co-operate, we may reach an era of satisfactory antisypilitic therapy.

FOR SALE.

My property at Friendsville, Tenn., consisting of six-room house, barn, office and store house, on corner of lot, all in good condition. The practice will be free. For a man who wants to work this is the place. Will give possession any time. As good farming country as can be found in the state. Situated on L. & N. R. R., 21 miles south of Knoxville. Reason for selling, bad health. For particulars call or write

N. C. ELLIS, M.D.

Lock Box N.

Friendsville, Tenn.

STUDENTS AND INTERNES PROVIDED FOR AT LAST.

The Journal of the American Medical Association has made a splendid fight to secure exemption from Army service for medical students and hospital internes and publishes, in its issue of September 8 a statement from the Provost Marshal which seems to indicate that the fight has been won.

The President, it seems, has prescribed "Supplemental Regulations," under which students and internes who can establish the fact that they are acting in good faith may enlist in the Enlisted Reserve Corps, after which they may be ordered by the Adjutant General to report to local exemption boards for military duty. They shall not be sent to mobilization camps, but will await orders from the Adjutant General, who may discharge them from the military service. They will then be free to carry on their work in hospitals or medical schools.

We would not criticize any public servant unduly, especially in this time of National stress, but to a man "up a tree" it looks like the Provost Marshal has been trying to "gum the game" in this matter of the exemption of medical students and hospital internes. He has made rulings and rulings, and has in some of his statements shown a lack of knowledge of facts bearing upon the status of medical education in the United States and an apparent unwillingness to make it possible for our medical schools to continue the supply of physicians—real physicians—without which our Army must necessarily fail if this war is to continue over a period as long as present conditions seem to indicate.

NOTES AND COMMENT

Dr. Max Henning, Memphis, can now be found in his new offices in suite 1701 Exchange Building.

Dr. J. M. Lee, Nashville, is now at Fort Oglethorpe as a Lieutenant in the Medical Reserve Corps.

Dr. E. E. Reisman has been made Chief of Staff of Erlanger Hospital, Chattanooga, succeeding Dr. J. M. Selden.

Dr. O. J. Porter, Columbia, is at work at the Fort Oglethorpe training camp as an officer in the Medical Reserve Corps.

Dr. Eugene Orr, Nashville, is at Fort Oglethorpe, having been commissioned Lieutenant, M. O. R. C.

Dr. P. H. Faucette, Columbia, Lieutenant in the M. R. C., is on duty at Fort Oglethorpe.

Dr. W. C. Dixon, Nashville, having been commissioned Captain in the M. R. C., has been ordered to the Rockefeller Institute for special instruction.

Among those "turned down" upon application for admission into the M. R. C. we find the name of Dr. Wm. Krauss, Memphis. Fortunately, physical limitations are not coextensive with scientific attainment and Dr. Krauss will be left at home to carry on his splendid work.

Dr. J. S. Fleming, Memphis, Lieutenant, M. R. C., has been ordered to the Army Medical School at Washington for a course of special instruction.

Dr. T. A. Mitchell, Nashville, is at Fort Oglethorpe as a Lieutenant, M. R. C.

Dr. J. R. Nankivell, Athens, Major in the Army Medical Corps, has been made Sanitary Inspector of Camp Sevier at Greenville, S. C.

Dr. Marcus Haase, Memphis, has been to Washington as a representative of the University School of Medicine, seeking to impress the Provost General and others with the imperative needs of hospitals and medical schools in these times when the army seems bent upon absorbing all the internes and medical students.

Malaria is to be made a reportable disease in the city of Memphis; every person engaged in the handling of milk sold in Memphis is to be vaccinated against typhoid fever.

The State Commission for the Blind has been appointed by Governor Rye, with Miss Josephine Crisler, Memphis; J. G. Craveling, Jr., Nashville, and Rev. C. H. Myers, Chattanooga, as members.

Major Jos. G. Bloodgood, M. R. C., addressed a Nashville audience on the evening of August 24 at the Orpheum Theatre in behalf of the work of the American Red Cross and in the interest of the Medical Reserve Corps. From Nashville, Major Bloodgood, accompanied by Major W. D. Haggard and Major L. E. Burch, went to Knoxville, where he spoke to a large audience.

Major Frank D. Smythe, M. O. R. C., and Major Battle Malone, M. O. R. C., were honored by the Tennessee Club of Memphis with a dinner on the evening of August 3. These two popular Memphis surgeons were among the first to offer their services to the Government. Major Smythe has been on duty for several months as Examining Officer at Memphis, while Major Malone is Director of the Memphis Hospital Unit.

The National Board of Medical Examiners held its second examination in Washington in June. Twelve candidates were examined, of whom nine passed. The next examination will be in Chicago, October 10 to 18. All who successfully pass the examination by this board will be admitted into the Medical Corps of the Army or Navy without further professional examination.

What is to be said of a Secretary of a county medical society who has not sent in his own dues to the State Association in two years? There is one such in Tennessee. Guess which county or ask your Secretary.

Dr. Frank Dunklin, Nashville, Lieutenant, M. R. C., has been ordered to the Army Medical School at Washington.

Dr. C. M. Beck, Memphis, has been commissioned Lieutenant in the Medical Reserve Corps.

Dr. L. E. Desprez, St. Joseph's Hospital, Memphis, is now Lieutenant in the Medical Reserve Corps.

Old Tennessee has not done at all badly in the matter of furnishing doctors for Uncle Sam. In numbers and in quality she has come up to the mark.

There are many who would go if they could—some of whom have been examined and rejected and some of whom have been refused examination because of manifest disabilities. There are many others, too, whose home responsibilities outweigh their obligations to the Nation in the matter of Army service. None of these are slackers, even though their names have not been printed in the Journal and elsewhere.

Where did you go last week and what did you do? What's going on among the doctors in your community? Send in some news for the Journal.

Dr. Thos. H. Ingram, Memphis, is now at the Training Camp for Medical Officers at Fort Oglethorpe as a Lieutenant, M. R. C.

It looks like medical students have been given a very "raw deal." Offering in large numbers when war was declared, they were told not to seek service in the Army, but to stay out and finish their course. After nothing was left for them but to be drafted they were coolly informed that there would be no exemption for them.

Dr. Samuel Wadley, Memphis, is now a Lieutenant in the M. R. C., U. S. A.

Dr. W. M. Blackmore, Lucy, has been commissioned Lieutenant in the Medical Reserve Corps.

The Memphis and Shelby County Medical Society has been doing its duty by the county in giving the public officials some very valuable aid in the matter of locating and operating the hospitals of the county.

Dr. S. E. Brinson, Memphis, has been made a Lieutenant in the Medical Reserve Corps.

Dr. Geo. C. Williamson, Nashville, is one of the Medical Officers with the Tennessee Artillery, ranking as First Lieutenant.

Dr. W. M. McCabe, for a number of years Superintendent of the Nashville City Hospital and lately resigned from that position, has opened an office in the Eve Building and will do private practice until such time as the Vanderbilt Hospital Unit, of which he is a member, shall be ordered into Army service.

Dr. Harlin Tucker, Nashville, is on duty as one of the Surgeons of the Tennessee Artillery, having been commissioned as a First Lieutenant.

The premedical department of the University of Tennessee will hereafter be at Knoxville, with Dr. S. D. Moreland as Dean and Dr. T. P. Nash as Assistant Professor of Chemistry, these gentlemen going from Memphis to Knoxville.

Dr. A. R. Porter, Jr., Memphis, Lieutenant, M. R. C., is at Fort Oglethorpe.

Dr. R. L. Dossett, Tullahoma, is at Fort Oglethorpe as Lieutenant, Medical Officers Reserve Corps.

Dr. E. P. Vaughn was recently elected City Health Officer of Manchester.

A little paint, stove polish, soap, water and old-time elbow grease, applied after a few wheelbarrow loads of rubbish are removed, will vastly improve several doctors' offices which we know of.

A clean collar and a shoe shine will make vast superficial improvement in the appearance of one or two doctors we know, too. There's just no telling what a semi-weekly use of a bath-tub would do for these fellows, especially if they would also invest in an extra shirt.

What has become of the doctor of whom it was frequently said, "I'd rather have him drunk than to have any other doctor sober?" We don't hear of him any more.

What are you doing for your town or your community in the way of public service? Are you on the school board or any civic committee? A good doctor can be worth a great deal to his community beyond his service as a physician.

Report your deaths and births promptly. It does not cost you much in time nor in money, but it may make a wonderful difference in the life of some person at whose birth you "officiated" if the properly filled-out birth certificate is on record. A legally registered death certificate, bearing the proper information, may decide momentous questions.

Dr. C. M. Banks, Springfield, is now at the training camp at Fort Oglethorpe as Lieutenant, M. O. R. C.

Dr. R. Q. Lillard, Secretary of the State Board of Health, has been in Chattanooga with Surgeon L. L. Lumsden, U. S. P. H. Service, making an investigation into the typhoid situation in and around that city with a view to the proper protection of the great body of soldiers encamped in the Chattanooga territory.

Dr. Sam W. Donaldson, Maryville, Lieutenant, M. R. C., is now at Fort Oglethorpe in the training camp for medical officers.

Drs. K. M. Buck, Max Kaplan, and L. L. Keller, all of Memphis, Lieutenants in the Medical Reserve Corps, are in the training camp at Fort Oglethorpe.

Drs. W. R. Arrants and T. B. Givan, Nashville, have been ordered to the training camp for medical officers at Fort Oglethorpe, holding commissions as Lieutenants, M. R. C.

Dr. D. L. Haggerty, Unionville, Lieutenant, M. R. C., is at Fort Oglethorpe.

Dr. T. W. Rhodes, Whiteville, Lieutenant, M. R. C., is at Fort Oglethorpe in the medical officers' training camp.

Surgeon L. L. Lumsden, U. S. Public Health Service, has been studying conditions at Chattanooga which may affect the health of soldiers in camp near that city. Dr. Lumsden is the "typhoid specialist" of the Public Health Service and has a long record of worthy achievement.

Dr. J. M. Ballew, Memphis, Captain in the Medical Reserve Corps, has been ordered to report at Camp Logan, Houston, Texas.

Dr. J. P. Delaney, Arrington, Lieutenant in the Medical Reserve Corps, is at Fort Oglethorpe in the training camp.

Dr. D. T. Austin, Bogota, Lieutenant in the Medical Reserve Corps, is in the training camp for medical officers at Fort Oglethorpe.

Dr. Nicholas Ardan, Bristol, Lieutenant in the Medical Reserve Corps, has been ordered to the training camp at Fort Oglethorpe.

Dr. B. C. Arnold, Jackson, is at Fort Oglethorpe, having been commissioned Lieutenant in the M. R. C.

Dr. L. M. Dykes, Johnson City, is at Fort Oglethorpe as a Lieutenant in the Medical Reserve Corps.

Dr. Ludlow Lambdin, Knoxville, is at Fort Oglethorpe in the training camp for medical officers, having been commissioned Lieutenant, M. R. C.

Dr. E. S. Turner, LaFollette, Lieutenant, M. R. C., is now at Fort Oglethorpe in the medical officers' training camp.

The many friends of Dr. S. S. Crockett, Nashville, will be pained to learn that he is in the Woman's Hospital with a fractured femur, the result of a fall while running to catch a car.

Drs. W. S. Nash, T. Ap. R. Jones, R. M. Young, Reese Patterson, B. V. Howard, Walter Luttrell, and B. N. Ogle, all of Knoxville, have passed examination for commissions in the Medical Reserve Corps.

The Memphis and Shelby County Medical Society, for the first time in its history, held a meeting on September 4 outside the city of Memphis. The members were guests upon this occasion of Dr. N. F. Raines and the people of Whitehaven. Public health subjects were discussed by Drs. Wm. Krauss and J. L. Andrews, fine entertainment was afforded the doctors and altogether the occasion was pleasant and profitable for all concerned.

Dr. C. E. Barnett, Newport, has received a commission as Lieutenant in the Medical Reserve Corps and has been ordered to report to Camp Sherman, Chillicothe, Ohio.

Second Lieutenant Edward Osler, R. A., only son of Sir William Osler, died in England on August 31 from wounds received while on active duty in France.

A prominent physician who has seen Ft. Oglethorpe in action suggests that the companies should be made up of "Leans and Longs", "Fats", and "Shorts". He avers that the "Fats" would have a far bigger company than these otherwise classified, though its size would dwindle as drilling went on.

It is not too late to secure a commission in the Medical Reserve Corps. Many men are yet needed from the ranks of the medical profession. Tennessee's quota is not yet full, by any means.

Memphis and Nashville have supplied, up to August 18, nearly half of the physicians to whom commissions have been sent. A number of men in these two cities have offered and have been refused because of physical disabilities, too. The plain truth is that the profession in the State outside of Memphis and Nashville have not come up in proper ratio.

Two hundred and forty-three commissions have been issued to Tennessee doctors—up to August 18. Several of these, just how many we do not know, have not been formally accepted.

NITROUS OXIDE-OXYGEN ANALGESIA IN LABOR.*

By Robt. Patterson, M. D.,
Knoxville.

It is to the discredit and chagrin of the medical profession, that we had to be aroused to a sense of our duty in the alleviation of the great suffering incident to childbirth by the cock-sure, sensational exploitations of the German method as used at the Freiburg clinic by popular magazine writers. Every development in nervous and mental power of the human race has brought it added pangs at child-birth. To the primipara it is a future nightmare; to the multipara, a memory of torture stoically endured. Why should not these great sufferers demand relief? The heartless disregard of the profession at large is in a measure compensated for by the fact that heretofore we have had no ideal for the purpose of producing analgesia in labor. My experience, though modest indeed, is sufficient to convince me that in nitrous oxide combined with air or pure oxygen, preceded by heroin in the first stage if deemed desirable, we have an analgesic and anaesthetic approaching as near the ideal as it will be possible to attain, if administered by a man trained in the use of these agents.

Nitrous oxide is the quickest acting analgesic and anaesthetic known. A patient can be put sound to sleep with it in from one to three minutes. Analgesia follows almost as soon as one breath is inhaled, its depth depending upon the number of the inhalations, and the concentration of the nitrous oxide. It is an absolutely inert gas. It produces no deleterious effects upon any tissue or organ of the body. Animals have been kept continuously asleep for 24 hours without any apparent harm. It produces death by asphyxiation and this alone is to be avoided. No cyanosis must be allowed, nor is any necessary. Nitrous oxide is thought to form a loose combination

with the haematin of the blood, thus preventing the access of fresh oxygen to the venous blood. Be that as it may, it produces anaesthesia, and analgesia by its direct action upon the brain cells.

Practicability, Use, and Limitations—I wish to strongly condemn the practice of allowing a patient to administer this or any other form of anaesthetic to herself. Nitrous oxide offers complete relief for the pains incident to child-birth for those who are able to pay for both an obstetrician and an anaesthetist. The poorest man will cheerfully mortgage his home for the necessary \$100.00 to have his wife's appendix removed—why should he be unwilling to get up an extra \$10.00 to \$25.00 to save her from torture and shock at a time when two lives are at stake? By the judicious use of rebreathing and by the intelligent use of suggestion to assist you, the expense of the gas itself can usually be kept below \$2.50. That this analgesic will ever come into general use by the great mass of the profession, I seriously doubt, because the majority of the country practitioners cannot readily procure the services of a competent anaesthetist.

Individual Variations—As in other forms of anaesthesia, there is a wide difference between individuals in the amount required to relieve suffering. Occasionally one finds a highly neurotic individual who requires almost a continuous analgesia. At the other extreme we find those who are relieved by a single inhalation. My last case was an example of this type.

Advantages Over Other Analgesics—As before stated, nitrous oxide is an absolutely inert gas. It may be administered continuously for hours if combined with the proper amount of air or pure oxygen, without the slightest effect upon any vital organ or tissue. It kills by asphyxia alone, and as before stated, and here emphasized, this alone is to be avoided.

On the other hand chloroform and ether damage the lungs, and kidneys, produce leucopenia, inhibit phagocytosis, and in other ways markedly influence the system. Besides this their successful administration produces a nauseated, sick patient, following labor. If given long or for a continuous analgesia they stop or inhibit the pains and predispose the patient to postpartum haemorrhage. Nitrous patient to postpartum hemorrhage. Nitrous

*Read at semi-annual meeting of East Tennessee Medical Association, Dayton, May, 1917.

oxide seems to actually increase the strength of the labor pains. It, together with the carbon dioxide stored up by rebreathing, help markedly in preventing the great amount of shock that so often follows labor, which is so little appreciated by the profession at large.

As for scopolamine and morphine, suffice it to say that the hospital facilities required, the trained assistants needed, and the perfection of technique entailed make its use impracticable; while the stillborn infants and delirious mothers observed, mar whatever reputation these agents have enjoyed as analgesics.

Disadvantages—These are confined to its cost and to the skill required in its administration. There are no contra-indications in labor.

Technique—Any kind of apparatus which allows rebreathing, which is portable and not too complicated, and which can be manipulated with the patient in any position on the bed is suitable.

Since reading an article by Knapp, in 1914, in which he reported 100 cases of labor, using heroin alone as an analgesic, it has been my custom to benumb the patient with this agent during the first stage of labor. My aim is to keep 1-12 gr. in action at the time. Knapp says this amount inhibits the sensory but not the motor impulses. My experience seems to justify this statement. So, when I conduct an analgesia I ask the obstetrician to administer 1-12 gr. of heroin as soon as he is sure that patient is in labor. This dose may be repeated in the highly neurotic, but usually 1-24 gr. is given if more is required. By this means the labor is made fairly comfortable and progresses normally. When the second stage begins and deeper analgesia is required I then begin the gas. Before doing this I explain to the patient its harmlessness; that it is odorless and inoffensive. Having gained her confidence she is asked to nod her head at the first sign of pain, and is instructed to take one long, deep breath. I observe the effect of this inhalation. Next time she is instructed to take two, and so I increase the number of inhalations without removing the face piece until the required number of inhalations for her particular case is ascertained. This will be the average number required with each pain until the perineal stage is reached. If the patient is very neurotic and complains greatly despite your efforts, give her a continuous light anal-

gesia for two or three pains and then make her do without gas during the next. The contrast will be so great that she will be converted completely. Her hysteria will disappear and her outcries will cease for fear you will again deny her the boon of relief. These efforts to influence the patient psychologically will repay you tenfold in success.

When the perineal stage is reached, instead of giving the gas only during the pains, you should meet the storm of contractions that supervene with a continuous administration to the point of complete anaesthesia, if necessary. This state can be continued while repairing the perineum, and during the delivery of the afterbirth.

Case Reports—Case No. 1: Mrs. L—, primipara, age 23, position L. O. A. Heroin 1-12 gr. preliminary. Patient went into second stage with no complaint, and with little apparent discomfort. Gas was begun at 10:30 p. m. Four inhalations invariably produced complete analgesia, until the perineal stage was reached. Intermittent analgesia now being insufficient, light anaesthesia was gradually induced for a low forceps delivery and for repair of the perineum. The patient was astonished at the comfort enjoyed all the way through the labor. "Job's comforters" had badly frightened her before labor.

Case No. 2: Mrs. F—, age 18, primipara; began labor about 3:30 p. m. Position L. O. A. Heroin preliminary. Despite the opiate the patient was profoundly hysterical during pains, but would relax completely and occasionally doze between pains. Toward the last of the first stage, the heroin action having diminished and not wishing to repeat it, the obstetrician called me to give gas. So neurotic was the patient that we had difficulty in getting her to breathe the gas in at all. However, by dint of much persuasion, she finally took a deep inhalation, and from then on labor proceeded without interruption. It is true that she still complained some—this type will if any form of analgesia is used—yet subsequently she assured me that its action was perfect as far as she was concerned, and that she had little memory of what transpired. We therefore had amnesia as well.

Cast No. 3: Mrs. P—, primipara, age 22, position R. O. P., obstetrician preferred morphine and atropine preliminary. Highly

intelligent, sensitive patient. First stage reasonably comfortable. During the last part of first stage suffering became intense. Began gas at 7:30 p. m. and continued it during the pains for four hours. At last, owing to the difficulty of manipulating the apparatus across the bed, chloroform was substituted for a difficult forceps delivery and extensive repair of perineum. The baby was resuscitated with difficulty. In this case I failed to get perfect analgesia by the intermittent method. Had I it to do over, I would administer a continuous light analgesia. Without the gas for the long period of waiting for the hoped-for rotation and for dilatation, I feel sure that her highly sensitive nervous system would have received a shock from which she would have been months in recovering. With it she had no shock and made a rapid and satisfactory recovery.

Case No. 4: Mrs. H——, primipara, age 18, position L. O. A., heroin preliminary. She received 1-8 gr. While this amount produced a fine analgesia during the first stage, it slightly inhibited the pains so that it was necessary to give small doses of pituitrin later. Began gas at 3:00 p. m. One inhalation each time was sufficient to produce complete analgesia. The patient chatted merrily along as labor progressed. At the end of 1 1-2 hours the perineal stage was reached. Light continuous analgesia was then used and labor was completed without a tear. The baby cried at once and its color was good. In this case nothing could have been more ideal. Here I wish to state that pituitrin works admirably in conjunction with this form of analgesia.

In conclusion let me say that for harmlessness, pleasantness and efficiency, when administered by a capable man, the combination here suggested has no equal as an analgesic in labor.

SURGERY OF THE PROSTATE.*

By T. G. Pollard, M. D.,
Nashville.

I realize that in bringing a paper of this kind before you nothing new can be brought out, but there are some features of this line of work well worth emphasis and the time for

consideration.

As a rule, in surgery of the prostate we have to consider certain factors which do not enter into the surgical procedure, viz., those of old age, or at least those of past-middle life, when as a rule men have acquired complications as a result of prostatic obstruction and infection. Postatectomy, then—an operation for the old and feeble—has necessarily a large mortality, though not attended by a larger mortality than that following other major operations in the same class of patients. In fact it may even show a more favorable comparison by observing the newer methods in the management of these cases. I know of no surgical procedure that demands a more careful investigation of the patient's general condition. The day surely has passed when a patient should be operated upon the day of his admission to the hospital. I am afraid that we have been just a little too slow in getting away from this hazardous custom. The surgeon, I think, has not been altogether responsible for this, but has had the encouragement of the internist as well.

This is the age of preparedness, so let us give our prostatic patients the benefit of it, for the death rate is still too high except in the hands of a few who have at their command the facilities of large clinics, but even in these the mortality is from 4 to 20 per cent. The most remarkable results of any are those obtained by Young in 1910, when out of 128 consecutive cases he had no deaths. I have not been able to find any record equal to this, nor do I find any mention of Young having accomplished the same results for the second time. While the mortality is not the only thing to be considered in prostatectomies, I believe it to be the most important thing and it behooves us to exercise every precaution to bring about the lowest possible results from this standpoint.

Working to this end the management will be divided into, (a) proper preliminary treatment; (b) rational operative technique; (c) rational methods of after treatment; and (d) rational methods of anesthesia. The proper preliminary treatment is no doubt the key-note to the whole situation. Formerly our patients received practically no preliminary examination and treatment, with the possible exception of a rectal examination to determine the en-

*Read at annual meeting of Tennessee State Medical Association, Nashville, April, 1917.

larged gland, and a dose of oil on the night previous to the operation.

A very few of the cases are good operative risks when we first see them, and it is left to us to find out what these risks are. Young has classified the risks as follows: (1) cases with renal impairment; (2) cases with cardiac lesion; (3) cases with cardio-renal disease; (4) cases with hypertension; and (5) cases with infection.

Renal Impairment—If we have good kidneys properly functioning, or poor kidneys that have been gotten into good functional condition, the patients get well in the majority of instances regardless of the operator or operation. If, however, this renal condition is not known and attended to we have a good percentage to die within from two to five days after the operation, supposedly from shock, hemorrhage or exhaustion. At any rate, death from the latter causes have become much less since more attention has been paid to the functional conditions. The greatest danger is uremia. This was brought out in a paper by Tenny and Chase, of Boston. In 160 cases they gave the cause of mortality as follows: Uremia, 30 per cent.; hemorrhage and shock, 22 per cent.; embolism, 12 per cent.; other causes, as sepsis, 11 per cent.; pulmonary, 8 per cent.; cardiac, 9 per cent.; general debility, 3 per cent.; acidosis, 1 per cent., and accident, 1 per cent., making a total of 36 per cent. of these miscellaneous causes.

The renal impairment is most often due to back pressure. We may have added to this renal infection as pyelitis, pyelonephritis, and pyonephrosis. If one has them in mind, these pyelonephritis cases are relatively easy ones to recognize and to guard against, because they present an infected urine of low specific gravity, a distended bladder, and, in the most advanced cases, digestive disturbances. In these cases it is easy to judge the amount of renal disability by estimating the phthalein output, the quantity of urea, amount of albumen, etc.

Chute has emphasized another type of case that he considers more dangerous—where one has a chronically over-distended bladder with no infection of the urine. He contends that these cases are much more dangerous than the others for two reasons: First, because they are very often overlooked on account of the lack of symptoms pointing towards the kid-

neys; second, because they have not received the immunity granted by the chronic infections and almost any manipulation will be attended by infection. In these cases the urine is large in amount, of a low specific gravity and with little albumen. These patients may have coated tongues and dyspepsia, and if the process is advanced, nausea and vomiting, but no edema nor blurring of vision and no renal elements in the urine. The blood pressure is not necessarily high. These are the cases that die in from two to five days after operation—attributed to shock, hemorrhage or exhaustion, but in all probability due to renal insufficiency. Before any effort is made towards an operation phthalein tests should be made. Young gives his routine as follows: On admission a test is made if possible, with the first catheterization, as important functional changes may occur after that. Then semi-weekly tests are made. If the first phthalein is good, the amount of residual urine not great (over 200) and the general condition good, the operation is usually not delayed. If the phthalein test is poor (appearance time over 15 minutes, excretion first hour under 30 per cent), the patient is put on preliminary treatment while further studies are made.

A large amount of residual urine may or may not mean renal impairment, but I think we should treat the prostatitis with a residual urine as though their kidneys were impaired. The principle to be followed is to relieve the back pressure or urinary retention, encourage the taking of large quantities of water to keep the kidneys active, expel uremic products and keep down infection. Urinary antiseptics are valuable and should be used in all cases except those in which they act as irritants to the bladder or stomach. The relief of the urinary retention is most essential and can be dealt with either by (a) suprapubic drainage; (b) inlying catheter; (c) intermittent catheterization. The same results may be accomplished by any one of the above methods, but, unfortunately, neither is applicable to all cases. In some of these cases catheterization is exceedingly painful and at times impossible on account of stricture or obstruction. In other cases we may find that the irritation from the inlying catheter or the mere passing of the catheter will set up an epididymitis. The suprapubic drain has its best advantages, I believe, when it is to be

followed by the suprapubic operation from the fact that it walls off the space of Retzius and causes a diminution in the congestion about the prostate which makes troublesome hemorrhage less liable. It may have the objection of rather committing one to the suprapubic operation, although it is no absolute bar against the perineal operation.

As soon as the patient is passing a good amount of urine and all signs of urine intoxication have disappeared, or have been reduced to a minimum, operation is indicated. We have for our selection two operations—the suprapubic and the perineal. It will not be my object to discuss to any great extent the advantages of one over the other. The operative technic is, after all is said, an individual thing. The operations the world over are at the present time performed after the same general plan and yet individual details vary; upon the details depend our understanding of a good technic upon the one hand and a poor technic on the other. We can best do that operation whose technic we best understand. If one will witness Freyer during his suprapubic prostatectomy operation he will no doubt think it the acme of perfection, because it is by the hand of a master. Then, on the other hand, if he will witness the work of Young, of Baltimore, a master of the perineal prostatectomy, an impression is obtained that the perineal operation, too, is the acme of perfection. So it is that we have the two classes following the two masters. The suprapubic operation is perhaps the most popular—90 per cent., or more, of the prostatectomies done in this country and Europe are done by the suprapubic route. There are excellent points in favor of this method. Particularly in the hands of the average operator is the after condition better as regards perfect healing of the wound, continence and control of the urinary flow, safety of adjacent structures, easy control of hemorrhage and the accessibility of the wound for after-treatment. A perineal prostatectomy, to my mind, has in its favor a lower mortality, a feature that appeals to us all, and one, too, that has been the greatest check to a suprapubic monopoly. The functional results in a perineal operation if done properly, to say the least, should be equally as good as those obtained by the suprapubic route, if by functional results we mean the ability of the blad-

der to retain the urine the usual length of time and discharge it normally. Interference with the latter results are due to destruction of the vesical sphincter, or compressor urethrae muscle. This accident, if you please to call it that, is altogether unnecessary. In malignancy the perineal route I believe to be the better choice from the fact that the bladder mucosa is not extensively interfered with, which would in itself produce a fertile field for extension of a cancerous growth; and then, too, if decision is made upon resection of the whole gland with its capsule, the seminal vesicles and the trigone of the bladder, a much better opportunity is afforded for thorough work.

Anesthesia—Anesthesia is an important factor in the mortality of prostatectomies. Every conceivable method of anesthesia has been used in the effort to find something ideal. Ether has been widely used in the past and is still used as a routine by Young. The frequency of post-operative pneumonia, kidney irritation and vomiting following ether has caused many to try out other anesthetics. A most gratifying change has come about in these respects since the adoption of gas and oxygen anesthesia and spinal anesthesia. Following gas and oxygen anesthesia, the patient's convalescence begins at once by being able to take large quantities of water and nutriment. Practically the same course follows spinal anesthesia. In the East spinal anesthesia has been used rather extensively, but I have been unable to find the results in any given number of cases. While everything may go well in the majority of cases it now and then happens that it is not effective in producing the desired results and general anesthesia must be introduced. Furthermore, if for any reason during the operation, it is necessary to put the patient in the Trendelenburg position there is danger of the fluid in the spinal canal gravitating to the dorsal and cervical regions, producing embarrassing complications.

A combination of sacral and local anesthesia is very satisfactory and I believe safer and better than the spinal method. The reason that sacral anesthesia cannot be relied upon as the sole means is its uncertainty of action upon the nerve supply of the upper posterior capsule; even in the hands of Lawen, Schneider and other past masters of the art, failure oc-

curs in about 10 per cent. of cases.

Conclusion—Prostatectomy may be done equally as well by the suprapubic as the perineal route. The mortality is unmistakably lower in the perineal operation. Any surgeon who decides to do but one of the two operations in all cases, without consideration of existing conditions, certainly raises his operative mortality. The principal point to be considered is the proper preliminary treatment looking to conditions with reference to the residual urine, renal impairment, infection and cardio-vascular changes.

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 A. M. A. Vol. 66, 1916; Vol. 68, 1917.

DISCUSSION.

DR. EUGENE J. JOHNSON, Memphis: I want to heartily endorse everything the essayist has said in his most valuable and timely paper, and I wish to bring out in this connection the importance of careful preparation of these old fellows before they are operated on. As he said, it is hazardous to think of taking them and operating on them as soon as they get to the hospital. The importance of preparing them will certainly give us results that we would not otherwise obtain, for the reason he has mentioned. If these patients are not carefully prepared we will have fatalities.

In dealing with the aged, as he mentioned, we have invariably acidosis that is destructive to these people. The importance of correcting that and the importance of getting the excretory system in as good physiological functioning condition as possible cannot be emphasized too strongly. All of these points, if carefully observed, will bring to us good end results.

With reference to the technic, when the patient is prepared for an operation, and careful attention is given to the anesthetic and to the mechanical arrangements and mechanical care of the patient, I have had very satisfactory results in dealing with them in a surgical way. First, from the standpoint of anesthesia. In dealing with these aged patients we realize the importance of staying away from these anesthetics that are harmful to the blood, to the heart and to the kidneys as much as possible. In my own

individual experience I have had most satisfactory results from a combination of hyoscin, morphin and novocain in a local way, giving my patients an hour before table time one-hundredth of a grain of hyoscin and one-quarter of a grain of morphin, which is sufficient in the average case of an old person to practically put them in a semi-conscious condition.

Personally, I prefer the suprapubic route because in using a local anesthetic it is better and makes the operative field more accessible. Then I use blocking with two per cent novocain solution, making my incision through the structure into the bladder perfectly satisfactorily, having put my patient in the Trendelenberg position on the table, then opening into the bladder with a self-retaining retractor you can observe in a very thorough way the prostate gland. With a long needle you can block the prostatic zone with two per cent novocain solution, and go ahead in a gentle and nice and easy manner and peel the gland from its capsule. You can observe, after dissecting the gland in a gentle and nice way, a little bleeding point or points; catch them and ligate them. After having done this, I take a rubber tube, place in it a piece of gauze, making a cigarette, so to speak, placing it in the prostatic capsule, and with a continuous suture I whip around the prostatic capsule with a continuous No. 2 chromicized gut, tied snugly, and pulling together the prostatic capsule neatly and nicely around the drain. The drain acts as a drain and pulls all tissues with this oozing area snugly to the tube, thereby cutting off and eliminating the oozing or hemorrhage which it is sometimes almost impossible to control. In addition to that, as a precautionary step against bleeding, I give these patients as a routine 10 c.c. of serum the night before operation, and 10 c.c. while on the table. I have found in giving these patients serum and in using this method in snugly and neatly adjusting the capsule, I have no hemorrhage. To conserve the forces of these people means to lose as little blood as possible, because we recognize that the loss of blood to the aged means destruction, shock and death, as the doctor has brought out, and a very large percentage of these patients die, I think, as a result of loss of too much blood.

DR. I. G. DUNCAN, Memphis: I want to congratulate Dr. Pollard on his excellent paper and especially on the two-stage operation. A lot of these old men come to us with their kidneys all shot to pieces, and if you give them H. M. C. and a little novocain, as Dr. Johnson said, you can make either an opening into the bladder suprapubically or through the perineal route, put in a tube, and by having a glass syringe that holds two ounces you can irrigate the bladder five or six times a day; you can have a saturated solution of boric acid, and have a nurse put a syringe-

ful through the tube and it is remarkable how soon they clear up. The pus disappears, the congestion is relieved, and it reduces the tendency to bleeding.

Another good preventive method is to give these patients mixed vaccines for about ten days before operation, and by giving attention to other things you will avoid infection.

With regard to local anesthesia for removing the prostate gland, my experience with it has not been quite so favorable. My experience has been that you have a certain amount of shock, and the patient suffers and squirms and wiggles, and you get sorry for him and quit before you get through, so to speak; but if you give the patient H. M. C. before operation, and give what we call gas and ether anesthesia, you greatly facilitate your surgical work. The new apparatus has a little glass cup for the ether, and as it is vaporized the gas from the ether and the nitrous oxid and oxygen gas come together and form a combination. By giving probably a tablespoonful of ether you can keep the patient under for half an hour to an hour. In my experience this form of anesthesia has been very satisfactory and it has practically no detrimental effects. It is much more satisfactory than local anesthesia.

DR. POLLARD (closing): I wish to thank the gentlemen for emphasizing some of the salient points brought out in this paper and also for mentioning other points as to the technic and management of the cases. Those points I was not able to cover in the paper on account of the shortness of time.

I am glad we have settled for all time the question of preliminary treatment. I think we all agree that in these cases, with the possible exception of a few, we should always resort to preliminary treatment. In other words, they should always have the two-stage operation. That does not mean that the patient should always have suprapubic drainage, but catheterization either by the inlying catheter or the intermittent catheter will answer the purpose in a large number of cases. I thank you very much for your attention.

SOCIETY PROCEEDINGS

OBION COUNTY.

The Obion County Medical Society had its August meeting at Reelfoot Lake. The President and Secretary were there and enough other members to have a good meeting. Dr. Har Glover read a paper on "Typhoid Fever." Considerable business was looked after—and a new member received by transfer from Shelby county, and an old member "exiled" to Mississippi, some paid dues and

others should have done so. As this meeting was in the nature of an outing, the doctors' families were on hand and everybody enjoyed a good square meal of fresh fish and coffee.

J. D. CARLETON, Secretary.

MISCELLANEOUS

MOVABLE KIDNEY.

W. Brtlett, St. Louis (Journal A. M. A., August 25, 1917), says in the light of present knowledge the one definite and invariable indication for operation for movable kidney must be of anatomic nature, namely intermittent hydronephrosis. All other movable kidney patients are subjects for medical treatment. Most of the earlier operations have depended on some form of suspension, as opposed to the distinctly supportive procedure he advocates. The operative technic proposed rests in principle on a common clinical observation that the movable kidney becomes the more movable as the individual's body fat disappears and the mobility decreases as the body weight is regained. With the patient lying on the left side he uses the von Bergmann incision, which bisects the angle formed by the last rib and the outer edge of the erector spinae. As soon as the abdominal cavity is opened, all the fat is removed from the inside of the posterior abdominal wall, leaving the muscles perfectly bare, the object being the ultimate formation of broad adhesions between the kidney and these denuded muscles. The fatty capsule of the kidney is divided longitudinally the entire length of the organ and caught with clamps at several points. The exposed kidney is lifted out of the abdomen while the fatty capsule is inverted over onto the pedicle and divided to a considerable extent above, so that when the kidney lies completely outside the wound edges the inverted fatty capsule occupies the position beneath its lower fold. The cut edges of the fatty capsule originally grasped by clamps are united, thus transforming the inverted structure into a ball of fat, which is usually about half the size of the kidney itself and this now forming a pedunculated flap is transposed into the space into which the kidney formerly slid, and anchored to the inner aspect of the abdominal wall directly under the lower angle of the wound by a stitch of the catgut used to unite it into one spherical mass. The posterior abdominal wall is then completely closed in layers without drainage. The operation thus accomplishes three objects: the self-lubricating lining of the extra peritoneal cavity has been removed and the cavity itself below the kidney has been filled up; the bared kidney and bared muscles of the posterior ab-

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dominal wall are definitely opposed to each other for adhesions to form. The Mayos are the only surgeons who, so far as Bartlett knows, have made an attempt to treat movable kidney by obliterating the defect into which the organ has slid. They have done this by attaching the hepatic flexure of the colon to the lateral abdominal wall, and Longyear has doubtless accomplished the same thing, utilizing his "nephrocolic" ligament for immobilizing both the kidney and bowel. The after-treatment is directed to keeping the kidney at a higher level by a binder elevating the foot of the bed, etc. Forced feeding is required to aid the accumulation of fat. The patient is kept on his back for two weeks, as this is considered long enough for adhesions to form between the kidney and muscles. Bartlett has operated in this way in twenty cases. One patient died suddenly after nine days apparently doing well, but no necropsy was obtained. The remaining nineteen patients have all been heard from and fifteen have been personally examined and satisfactory results demonstrated.

NASOPHARYNGEAL DISINFECTION BY HYPOCHLORITES.—While the practical sterilization of infected wounds by means of hypochlorites has been effected, the sterilization of the nose and throat is far more difficult, especially in the case of diphtheria and meningococcus carriers. Encouraging results from the use of a hypochlorite substitute, dischloramine—T, have been reported, but these require confirmation (Jour. A. M. A., Aug. 25, 1917, p. 651).

BOOK REVIEWS

PRACTICAL MEDICINE SERIES. Vol. IV.—**GYNECOLOGY.** Edited by E. C. Dudley, M. D., and Sydney S. Schochet, M. D., Chicago.
Vol. V.—**PEDIATRICS and ORTHOPEDIC SURGERY.** Edited by Isaac A. Abt, M. D., A. Levinson, M. D., John Ridlon, M. D., and Chas. A. Parker, M. D., Chicago.

These volumes are the regular periodic reviews of the literature bearing upon their respective subjects. The general excellence of the Practical Medicine Series is well maintained. Of especial value is the "Index to Authors", long a feature of the volumes of this series.

A TEXT BOOK OF ANATOMY FOR NURSES. By Wm. Gay Christian, M.D., Professor of Anatomy, Medical College of Virginia, Richmond, C. V., Mosby County, St. Louis.

This little book is dedicated to the memory of Edith Cavell—"who died for her friends". The author insists that medical colleges should offer a practical course in anatomy to be attended by

nurses during the vacation period, believing that all who should know anatomy can secure such knowledge only after having *seen* the arrangement of the tissues and organs of the body. There are thirty-four excellent illustrations, some of which are designedly diagrammatic. The book goes a little further into details and takes up more anatomy than others of like nature which have come under our notice.

THE FUNDIS OCULI OF BIRDS. By Casey Albert Wood, M.D., Chicago. Lakeside Press, Chicago. Price \$15.00.

In this unique work one will find a very interesting and odd subject very thoroughly discussed. The author has combined the results of his own investigations, extending over a period of ten years, with the observations of numerous distinguished zoologists, biologists and artists from the four corners of the earth in making this treatise—beautifully illustrated with numerous color plates and drawings—on the fundi of domestic and wild birds and animals. The book is in a class by itself. It is doubtful, however, as to whether or not the book will prove to have a great deal of practical value for ophthalmologists except as it offers opportunity to compare similarities and differences of the eyes of birds and those of human beings.

JERE W. CALDWELL.

PRACTICAL TREATMENT. Vol. IV. By 76 eminent specialists. Edited by John H. Musser, Jr., M.D., Associate in Medicine, and Thos. C. Kelly, M.D., Instructor, University of Pennsylvania. 1,000 pages, illustrated. W. B. Saunders Company, Philadelphia, 1917. Cloth, \$7.00.

This volume of the Handbook of Practical Treatment is supplemental to those preceding it and in it is given what is new and more modern that was not included in the first three volumes. It is a most thorough work, including practically all that could have been put into a book up to the time when this one went to press. To have at hand a book to which one can refer for a discussion of practically all the newer therapeutic measures is a convenience and a comfort which can hardly be exceeded, especially when the contributors are men like those who have written for this volume and when the work of the editors has been so well done as in this instance.

INDEX TO MUSSER AND KELLY'S PRACTICAL TREATMENT. W. B. Saunders Company, Philadelphia.

This is a desk index to Vols. I, II, III and IV of the Handbook of Practical Treatment. It is complete in every detail. Each of the four volumes has its own index, which is very full, while this is for all of the four volumes and will prove a most valuable convenience.

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THE INSANITIES AND THEIR RELATION TO THE PRACTICE OF MEDICINE.*

By J. J. Waller, M.D.,
Oliver Springs.

As scientific investigations go on we are constantly gaining in ability to extricate from the dark mine of creation rich, golden nuggets of truth and classify them alongside other better known facts and principles. We try to rest the distortion of physiological function, or what is known as a disease process, on a pathological basis demonstrable in the laboratory or at the bedside, and name it accordingly, but we are yet unable to do so in all cases; therefore, we are left to consider some cases and deal with them on their clinical manifestations, their remote and exciting causes. Humanity is divided into two grand divisions, the sane and the insane, and in earlier days the sane, so to speak, claimed all there was good and humane to the race, and the insane were but unfortunate demons in human form, possessed of devils or evil spirits and worthy only to be weighted down with chains or confined in dungeons. The searchlight of science has revealed to us that this old dualistic idea was in many respects wrong. In the main, this idea may still be kept in mind, but the myriad types of humanity, intellectually considered, convince us that there is not in all cases a very well defined line or boundary around either class. The gradation from the one class to the other is often so imperceptible that a new and more scien-

tific classification is imperative—one that allows a possibility of benefit in its class by treatment.

No well-chosen definition for insanity has yet been presented, but for a working basis I offer the following:

A more or less permanent deviation from a conventional or recognized standard, accepted as normal by the best alienists, in one's manner of **acting, thinking or feeling**. Really there is no fixed standard of intelligence or mentality, for what is normal and sane for one individual would be an indication of mental aberration in another. To think and act logically and consistently all the time is a pretty fair standard. The best way in the individual case is to compare one's conduct and demeanor with that of his former self. Breaking up of old fixed habits of consistency and intelligence is rather ominous that the mental wires are becoming crossed.

In order that each type of insanity may rest on its own basis and have its cause and management properly considered, a simple and practical classification is essential.

The **first** and simplest type is made up of the various deliria, confusions, and stupors. As a general rule, they are so brief in duration that they scarcely merit a place among the insanities. Some kind of infection is at the bottom of all these. Simple febrile delirium often accompanies the various somatic fevers, and specific febrile delirium is one whose cause is not to be located in any particular organ or certain part of the body, but is from some unknown infection and is often fatal. Some of the deliria are afebrile, thus showing that it is the infection and not the febrile process that is the cause. Confusion

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is milder and more prolonged than delirium; both more than likely will subside as the infection is eliminated. Stupor is an indication of a more intense degree of the infection and may end fatally.

The **second** type is made up of melancholia, mania, and circular insanity, or manic-depressive insanity. This is very common, constituting anywhere from 16 to 20% of the insanities. It is also known as fatigue neurosis. Overindulgence in physical or mental labor, worry and trouble of various kinds, when engaged in by one neuropathically inclined, is likely to produce a victim of this class. The melancholic cases take all the blame on themselves on account of some great wrong they suppose they have committed; they often refuse to eat and have to be fed with a tube; they are slow to answer or respond in any way to questions except in cases with agitation. They often decorate themselves in colors and ribbons and carry with them frivolous things, storing them in dens. Suicide is common among them.

Maniacs belong to the same class, but are very opposite in talk and action; they are flighty in mind, not confining themselves to any one subject any length of time, but passing visions by like stereopticon views. Members of this type are characterized by great memory for events, bodily commotions, and a veritable diarrhea of words. Melancholia and mania may alternate in cycles each of several weeks' duration, constituting circular insanity. Cycles seem to characterize these attacks, and between them sane periods may be interlarded. Heredity plays a prominent role here, and, in the main, they are hopeless.

The **third** group is made up of the heboid-paranoid cases with all its subdivisions. The hebefrenics and catatonies together constitute the class of dementia precox. They are generally from youth to middle age and make up about 24% of all cases. They are generally hereditary, uncertain or hopeless in outcome, and likely to drift into secondary dementia. According to Kraepelin, we may expect about 13% of this class to recover.

Paranoia is classed in this group and is very important to consider. Being directly opposite in one sense to melancholia, it is in-

teresting from another cause. Cases of melancholia blame themselves for their troubles and may end all in suicide; cases of paranoia blame others and outside agencies for their condition and may gratify their ambition by taking the life of the victim whom their systematized delusions have fixed. He really thinks he had to do it to even up, get revenge, or save himself. He is always grumbling at his treatment, that he is being starved, talked about, or a victim of schemes and plots. Being firmly deluded into such belief, he waylays his victim or assassinates him in the open, making no effort to cover his crime or to escape. Between eruptions of madness he seems rational and may deceive the very elect, so to speak.

There is a mystic type of paranoia not so dangerous in its nature, but laboring under the most unnatural and ultrasenseless delusions. They may claim a relationship with the angels, saints, or Deity, even to be the Saviour and to have come to deliver the world and set the millennium going. They may drift into a shockingly vulgar sphere and claim to have had relation, sexual and otherwise, with the great earthly rulers or characters divine. Now and then some eccentrically-minded and peculiarly dressed person is suddenly heard on our streets shouting a new and peculiar doctrine that has just been committed to him, the true Messiah, to deliver freely to men, and as many of the simple-minded are easily drawn into the vortex of ecclesiastical sophistry they gather about them a following that is surprising. There is such a thing as insanity by influence and imitation, as in the old trick of Simon says "Thumbs up." The wells of science and mental philosophy are too deep for many little cups to reach and get drink, so they accept eagerly a draught from the murky waters of the swamps of ignorance and superstition. History is strewn with relics of false cults and doctrines, many of them having arisen in the name of religion. So far as I know, every mystic paranoiac that has ever given utterance to a doctrine has had a following. They not only carry away the simple-minded innocent, but now and then seem to be consistent enough to die in their delusions. Mystic paranoia is not a rarity,

for among the many newfangled doctrines and cults are found many extravagant claims that savor of its delusions. Our scientific probe often fails to sound the bottom of many human ills; our patients go away dissatisfied, grasping at every idea which militates against our great profession, and in case a bit of relief is had while floundering among the cults they shout "Eureka! Down with Aesculapius." I trust you will pardon this digression.

Under class **four** we have the neurasthenic-neuropathic types with all their weaknesses, both hereditary and acquired, and the various phobias. The feeble will in regard to push and resistance is much in evidence in this class. It seems they have no self-control either way.

The **fifth** group embraces the dementias. In the four first groups the quality of the mind is affected; in the fifth the quantity is at fault. Dementia is primary when caused by a physical brain lesion; secondary when the result of a previously existing insanity. The former is illustrated in the failing mind of old age.

Various other types of insanity are recognized that depend on certain causes. Alcohol has its portion; pellagra is potent in many cases. The various toxic conditions and infections, both general and focal, should be considered. A dentist recently visited our county society and reported one case where the infection from an alveolar abscess caused mental aberration, which was relieved by curing the abscess.

Syphilis is one great and important cause above all others, 10 per cent of the inmates of the Massachusetts Asylum being due to it. It may appear three to five or ten years after infection, or as late as forty. It insidiously plays havoc with the gray matter in some of the most unsuspected cases. All honor to Wasserman for revealing its existence against the false statements of its victims! Lues is a mocking-bird in neurology and mental diseases. It should be thought of in connection with every case of insanity presented; verify or eliminate that by all means to start with.

Paralytic dementia is great among the insanities, and he who is not alert to its possible presence is not walking in the light of progressive mental science. Beware of the man whose mind is going out in gigantic schemes to do great and hazardous things.

Search for the various and varied causes in all the irregular and unclassified types. The second, third and fourth types, according to our classification, are from 80 to 90 per cent hereditary, plus the excitant. Many times the cause is obscure, even unknown, but do not cease to investigate. To find the cause is often the keynote to success; not to find it means failure, to the physician, at least. Prove all points, beginning at the bottom, and make it a quod erat demonstrandum.

An insane man is a sick man; his mind is sick, and he may be sick in other ways. The integrity and equilibrium of the mind are largely dependent on a perfectly functioning physiology. The pathology of these troubles is often difficult to ascertain. Like the razor's edge, much in evidence but impossible to see. The neuron is the unit in neurology, and the dendrites are reached by an impression before the cell-body, and the force may be sidetracked by the collaterals before the end brushes pass it on. So delicate, so sensitive is the fine histological structure of the great sensorium that nature has encased it in vault of bone for protection against jars and injuries, and so sublime are its functions that great rest is regularly and periodically demanded of it while other portions of the body toil unceasingly on.

Last but not least, let us not so far stupid grow as to overlook that class which whirls before us that kaleidoscopic display of mental hieroglyphics often manifest by the eccentric benedict when he braves all odds, crosses the Rubicon, and enters the broad domain of matrimonial bliss. Grazing in the connubial pastures in the springtime of life, basking in the sunshine of early love, and sniffing the fragrant odors from the flowers growing on Hymetus' towering heights of joy now and then dethrone all reason and leave the novice a pitiful wreck in the arms of love.

Now the second division of my subject is reached, the relation of the various insanities to the practice of medicine. Physicians are expected to know almost everything about a human being, especially as to his sanity, and we should know that much in order to mete out justice to our patients and do credit to ourselves as professional men. To be able to recognize a man off his trolleys on coming in contact with him is a very nice art and very essential. Sorry to say, the profession is not every time onto its job and many unpardonable blunders have been committed—hard to determine sometimes who is the biggest fool. The physician should know enough about mental diseases to determine which classes of the insane will likely recover, which are dangerous to themselves and others, which are best treated at home among their friends, which are capable of executing papers, and which are accountable for their conduct. All these are live questions to the physician and fall to the brim with tremendous importance to the patient and joy or sorrow to his friends. The state of mind when one contracts or executes papers should be familiar to the doctor, and the causes leading up to it. His evidence may mean riches to some, poverty to others; may mean censure to the doctor. Let it rest on truth and honesty.

The assassin is brought into court and the question is raised as to what actuated him; the doctor is brought in and all eyes are turned on him to shed light on the case. Is the accused a treacherous paranoiac or a wicked murderer? The answer means the "bughouse," gallows, or electrocution chair. It is very comforting to the doctor about this time to sit up and be able to talk knowingly and astound the court with a knowledge of mental diseases and aberrations that defy all criticism and contradiction, for it is very embarrassing to be rocked in the cradle of ridicule by a little two-by-four shyster who has been prompted for the occasion. One who has been in the chain-gang, penitentiary, or worn stripes justly or unjustly is stigmatized as an ex-convict, and to be branded with that epithet is not unlike the "U. S." on a government mule, never to be erased. People do not often go behind the returns, and one min-

ute in stripes means ruin for life. This is even more true in regard to insanity. I would just about as soon my trail had come through the penitentiary as the asylum, for some redemption to the one might be possible through reformation, but not the other. To be once, even for a short while, an inmate of an insane asylum casts an odium about any life, however promising, that is never driven away by the winds of time. Let me say to you as the central point or thought in my essay, Be careful! And again I say, Be careful!

The deliria and confusions of the various fevers and infections are not likely to cause one to be sent up, if the doctor knows his business, but prolonged confusion from these infections may cause suspicion. In such cases give plenty of time for the clouds to drift away beyond the mental horizon before even mentioning the idea of an essential insanity. Peculiar ideas and conduct may follow such infections as typhoid and other continued fevers for a long time, eventually passing away and requiring no treatment except at home. One case in mind became an infidel and turned against all who had nursed and attended him during his illness of prolonged typhoid.

The manic-depressive types often call for a diversion. Some of them will don the Dolly Varden style, ribbons and decorations, carry about simple trifles, and be the neighborhood "fool" with no harm in them; others of the same class should receive intramural treatment.

The dangerous paranoiacs should all be confined, notwithstanding all the many devices conjured up by themselves and theirs to have them go at large. It is not often that a simple neuropathic-nenrasthenic should be sent up as an inmate of an insane asylum. Some cases of dementia should be confined. All cases of the mentally sick should have the appropriate treatment either at home among their friends or in an asylum suitable for such.

Cases kept and treated at home for a reasonable length of time and not improving should be sent in for confinement, for all hope of recovery and future life having been blighted, there is no reason for such cases to

be held in the home and in the neighborhood to worry with the balance of their lives. No case should be suddenly thrust into the walls till plenty of time has been taken to study and analyze it thoroughly from cause to full-blown development and probable outcome. The divine injunction to lay hands suddenly on no man is appropriate here in a metaphysical way. To be instrumental in sending up a case with a removable cause, and in a few days that cause is taken away with complete recovery following, is a stigma to the physician, if not positively criminal.

Individualize each case, study the history, environment, habits, diet, home relations, focal infections, relation to puberty or menopause, sexuality, and everything calculated to jar or upset the general health, then observe the case for due time before resorting to the drastic measure of confinement in an asylum.

It is the part of wisdom to be on the alert for head injuries, fractures, or any other kind of trauma calculated to disturb the finer functions of the brain by disorganization of its finer anatomy. Members of families who are prone to become mentally aberrant often represent their people as having had a lick on the head in earlier days, or a fall which they call to mind in order to cover up the family defect and tendency. One in mind just now, a defective daughter who was said to be suffering from the effect of a fall from the hay loft when a child. Poor creature! On casting an eye around it appeared that possibly most of the family had fallen out likewise. It seems to be the consensus of opinion among the best alienists that the possibility for mental derangement a long time after cephalic trauma is exceedingly remote, and, in fact, would not expect it at all unless the heredity pointed that way. This one fact may be a fine medico-legal point in some cases.

Some of the insurance companies are getting down the somatic signs and functions to the point where they can suspect or see the anlage of mental dissolution early in its development and take heed to the omen. One case in mind which I examined a few years ago with only apparent perverted function was turned down, somewhat to my surprise. Another agent seized the applicant, had him

examined, and his company accepted him. In a short time the insured went off his trolleys.

There is positively a science in mentality, and we should know some of it.

DISCUSSION.

DR. S. T. RUCKER, Memphis: I was very much interested in Dr. Waller's paper. The thing that impresses me most concerning the relationship of the general practitioner to insanity is that he has to appear in the role of prosecutor towards one suspected of being of unsound mind. Under our present state law, when a person becomes mentally affected, some member of the patient's family, accompanied by a physician, goes before a magistrate and on testimony of the physician the patient is indicted for being sick, tried, found guilty, and committed to an asylum.

When I began to practice medicine there appeared to be a general opinion among physicians that the work of the alienist and neurologist was hardly dignified enough for a good physician to engage in. It was not long before I found this to be due chiefly to a woeful amount of ignorance in the profession concerning nervous and mental diseases. This lack of knowledge of nervous and mental diseases is not entirely the fault of the general practitioner. He has learned very little, if anything, in our medical schools concerning nervous and mental diseases. It appears singular that a department of medicine of so much importance should receive so little attention from the profession. This state of affairs, however, is passing now as practically all of the reputable schools of medicine have professors and teachers of nervous and mental diseases.

The relation of insanity to the general practitioner is of considerable importance for two reasons: In the first place, because of the large number of nervous and mental diseases; second, because a large number of these patients get well when properly treated. These patients should not be sent to an asylum until they are carefully examined and kept under observation and treatment for a reasonable length of time.

If the general practitioner will familiarize himself with the symptoms of these diseases and learn how to treat them, it will be profitable to him as well as to the patient. More of them will get well and a less number will be sent to asylums. It appears to me now opportune, and I believe the time is coming when every city the size of Nashville will at least have a psychopathic department to the City Hospital established for nervous and mental diseases, where this class of patients can be kept under observation and treatment for some weeks, or longer if necessary, before being committed to a state

institution. It would be an economic saving to the state, besides rendering more efficient service to the sick and suffering, if every city would establish a psychopathic hospital.

DR. HAZEL PADGETT, Nashville: There is enough food in Dr. Waller's paper to consume the balance of the day. There was a time in the history of medicine when there were three separate and distinct classifications of diseases that seemingly were surrounded by a mysterious atmosphere, that the general practitioner in medicine with ordinary eyes could not penetrate to that degree that he could get any intelligence out of the subject, and those were eye diseases, skin diseases, and nervous and mental diseases.

I have enjoyed every word of Dr. Waller's paper, and I am glad to say in society work and in our educational work the time has come when a greater effort is being made to unravel the supposed mysteries of nervous and mental diseases. Personally, I have felt that it is one of the most understandable and one of the most important branches in the whole domain of medicine—mental and nervous diseases. If we could get away from the idea that it is surrounded with a mysterious atmosphere and devote more time to the consideration of the common symptoms, the surface symptoms, as I sometimes say, the driftwood symptoms, that so many of us in years gone by had a tendency to brush aside, and when we have reached that point in our own decision that a person is insane and relegate him to the insane asylum with the feeling and thought that he is crazy, that nothing can be done to bring him back to mental and physical health again, we will begin to get better results; we will begin to redeem as is being done in this present day and time a great percentage of our unbalanced people with mental aberrations of different kinds that in the public mind are peculiar and are insane, and should be put in some institution for the care of the insane. I am not speaking about those who are dangerous, but those patients that live on the border line of sanity and insanity. I do not believe that the man or individual has ever lived, and I do not believe the soul will ever breathe, who can say or will ever be able to give a definition of insanity that will satisfy the professional mind and the legal mind in the medico-legal study of these subjects. That brings me to the point which Dr. Waller indirectly hinted at in his paper, and that is so-called expert testimony. This question was brought up many months ago in our Tennessee Society and I mention it now to emphasize the importance of the selection of a person to pass upon the mental condition of an individual. At the trial he should be selected by a judge and that selection should be based upon the man's actual or intimate knowledge of the subject of nervous and mental diseases in

all its various phases, and not permit a man who has been selected by a lawyer for or against the conviction of the person to come up without having that essential foundation for his opinion and say this man is sane or insane. Let him free himself entirely from the influence of this side or that side, and let him give his opinion straight to the court and let the court act upon it accordingly.

DR. WALLER (closing): I have nothing in particular to add to what I have already said in my paper. The prime purpose in writing it was to call attention to this subject that the profession might awake to the interest that is gathering in regard to it. There is no question but that insanity is on the increase, and statistics from the insane asylum of Massachusetts in regard to this matter how that it is becoming a tremendous question from a financial standpoint. Something like one-seventh of their taxes goes to maintain these asylums. The great causes bringing about this condition and the amount of money it will take to maintain it seems to be sufficiently important to attract our attention along the lines of consideration as to why insanity is on the increase and how we are going to meet the proposition.

No one in a short paper could cover this immense subject in twenty minutes. I think it was Josh Billings who said he did not care how much a man had to say if he could say it in a few words, but you cannot say much on the subject of insanity in twenty minutes. You can touch merely the high places, and if I said enough in the paper to warrant you in making a further investigation in regard to the causes and how to meet the condition and the increase, I shall be thankful for your consideration of the matter.

OPERATIVE TREATMENT FOR GANGRENE OF THE FEET WITH SPECIAL REFERENCE TO BLOCKAGE OF THE VENOUS RETURN OF TWO CASES.*

By J. B. Haskins, M.D.,
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Gangrenous conditions of the feet have been, and still are hard conditions to deal with. This condition follows a diminution of the caliber of the blood vessels supplying the foot and results from a disease which may be clearly systemic or which may manifest

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itself chiefly in the blood vessels of the lower extremities. Sudden occlusions, as by emboli, with consequent rapid gangrene, do not come under the title of this paper.

The diseases of the vessels which cause slow or threatened gangrene of the foot may be divided into the following four groups:

First: Arteriosclerosis.—This condition is caused by supposed toxic products, which may come from the deranged metabolism, as in nephritis or from infectious diseases, especially syphilis, or from the general wear and tear of life, as in old age. It is found chiefly in the arteries and is due to excessive thickening of the media or intima, or of both.

Second: Intermittent Claudication.—This disease was described by Charcot in 1856 and occurs in the legs. It consists of a vasoconstrictor spasm in arteries that are already affected with arteriosclerosis. Exercise appears to precipitate the spasm, the cause of which is a crying out of the tissues for nutrition. During the cramps the legs are cold and pale or mottled. The condition is purely one of ischemia. After rest the cramps may disappear, but pulsation of the tibial arteries is practically always lacking.

Third: Raynaud's Disease.—This disease is of a vascular order, probably depending on vascular influences, and not a real organic pathological condition. The constriction of the vessels is due to intense spasms of the small arterioles or venules just before they become capillaries. It may be of three types—a spasm of the arterioles alone causing a bluish color; of the venules alone, producing an intense redness of the affected parts; or of both the arterioles and venules, causing a marked blanching. Any of these types may result in gangrene.

Fourth: Thrombo-Angiitis Obliterans.—Dr. Leo Buerger, of New York, has made a very careful study of this disease, which was formerly rather vaguely classified and was referred to clinically under various terms. The German writers consider it an obliterating endarteritis. Dr. Buerger has shown that thrombo-angiitis obliterans has many distinctive characteristics and that the occlusion of the vessels is not caused by a thickening of the intima, but by a thrombosis. This dis-

ease occurs chiefly in the blood vessels of the lower extremities, though the upper extremities are occasionally affected. It begins, not in the arterioles nor in the smallest arteries, but in the vessels of medium size, and then ascends. In the foot, it is usual, according to Buerger, for the dorsalis pedis and plantar arteries to be involved first and later the disease ascends to the tibials and sometimes to the popliteal artery. The deep veins are also affected in about 40 per cent of the cases. Dr. Buerger states that he has found segments of apparently healthy blood vessels between diseased portions of the same vessel. He has demonstrated that in the first stages of the disease the affected vessels show signs of inflammatory change, and from this he has concluded that thrombo-angiitis obliterans is due to some microbe which has not as yet been isolated.

The life history of this disease as traced by Buerger is as follows: It begins with every evidence of inflammatory reaction, with round cell infiltration of the media and of the tissue around the vessel. This is followed by an apparently specific process in the tubercle-like formation and ends in organization and canalization of the thrombus. The disease is sometimes extensive and often ends abruptly in a clot, which projects into the lumen of a vessel which appears to be normal. It may progress in stages so that, while the vessels in the foot may show the old type of organized and canalized thrombus, farther up in the leg the tubercle stage may be seen, and still farther in the upper tibials the acute inflammatory reaction with a red clot, pus foci, and infiltration of the blood vessel wall and perivascular tissue may appear.

Thrombo-angiitis obliterans is found chiefly in males from twenty to thirty-five and rarely after forty. Most of the patients are Russian Jews, or descendants thereof; however, Dr. Horsley reports a case without Jewish ancestry that was born and raised in Virginia.

Dr. Buerger has found that the superficial veins are often involved and may give no symptoms in themselves. There may be vasomotor symptoms, such as flushing of the leg or foot when it is hanging down, followed by

blanching when it is elevated. The foot is usually cold and of a dark bluish color. Severe pain in the calf of the leg is experienced by individuals suffering from this disease. These symptoms may be attributed to the mechanical occlusion of the vessels which produce ischemia and partly to the fact that the nerves are sometimes pressed on or irritated by the scar tissue, which may result from the inflammatory reaction in the perivascular tissues.

The treatment of threatened gangrene should embrace such constitutional measures as may be indicated. When the arterial disease is due to diabetes, the Allen treatment should be instituted. If from other causes, such as syphilis, then anti-syphilitic treatment should be administered. Locally, conservative measures, as hot applications or hot air, particularly in cases of diabetic gangrene, sometimes accomplish much. Dr. De Witt Stetten reports excellent results in a series of cases of diabetic gangrene which he treated along these lines, never doing a radical amputation, but merely cutting away the gangrenous tissues at the line of demarcation.

For the treatment of gangrene due to thrombo-angiitis obliterans, a number of remedies have been suggested, some of them quite different. Dr. Koga recommends hypodermoclysis with saline or Ringer's solution as a remedy. Dr. Willie Meyer has obtained excellent results by this treatment, and thinks that the benefit is due to the fact that the solution in some way alters the quality of the blood. He has used it in more than thirty patients, and gives twenty-four injections in each case. Five hundred c.c. of Ringer's solution are given each time. Four regions of the body that take up the solution most readily are chosen and the solution is injected in these regions in rotation. The injections are given every day or every second or third day, according to the amount of discomfort that is caused.

Dr. L. L. McArthur reports six cases of thrombo-angiitis obliterans which he has recently treated with hypodermoclysis of Locke's or Ringer's solution with gratifying results. Dr. A. J. Ochsner, discussing this

group of cases, has found that patients suffering from this disease are promptly relieved from pain after an injection of Ringer's solution.

Operative Treatment.—Drs. Carrel and Guthrie, figuring that this disease affected chiefly the arteries and arterioles, decided that the veins could be utilized to carry the nutritive blood to the tissues. To accomplish this the arterial current was switched into a vein by means of a lateral or end-to-end anastomosis. This operation has been performed by a number of excellent surgeons.

Dr. J. Shelton Horsley, in order to determine whether arterial blood when switched into the veins really reached the tissues for which it was intended, undertook a series of experiments on dogs. After the reversal of the circulation the animals were killed at periods varying from half an hour to forty-six days after the operation. He injected a cinnabar mass into the circulation just above the anastomosis. The X-ray and careful dissection show that in no instance did the injected material in the reversed circulation reach the foot. In most cases it went only a short distance below the knee. He found that in all animals that lived longer than a few days the injected mass was quickly transferred by large anastomosing veins to the iliac veins and through them to the vena cava.

Dr. DeWitt Stetten arrives at the same conclusions, namely, that arterial blood in a reversed circulation goes only a short distance below the point of anastomosis and does not reach the tissue that most needs nutrition.

Drs. Horsley and DeWitt Stetten, after a series of experimentations and observations, arrive at the same conclusions—that the benefit obtained by reversal of the circulation in threatened gangrene is not due to the fact that the arterial blood in the vein reaches the affected tissue, but it is because the obstruction in the veins causes blood delivered from the arteries to linger in the tissues longer than it otherwise would.

Ligation of the femoral vein, as done by Von Oppel and others, which is so much sim-

pler than the reversal of the circulation, will produce this obstruction to the venous return more accurately and with much less danger than reversal of the circulation, and is an operation that can be done in a few minutes under local anaesthesia. It is indicated in threatened or early dry gangrene, when the veins are not greatly involved.

Case No. I.—Mrs. D., age 76, white, family history negative, Wassermann negative. Past history—No diseases since childhood until three years ago, when she sustained an old ladies' fracture which confined her to bed for about three months. During confinement to bed she had a carbuncle on her back that was very obstinate, but finally healed. In March of last year her feet began to give her a great deal of trouble and were always cold. About this time she noticed that the end of the second toes on the right foot was getting dark, which later developed into dry gangrene of the last phalanx. She also noticed a darkened area on the outer side of left foot at base of the little toe, which gradually developed to about the size of a fifty-cent piece. She was treated by various doctors until July 1st, when she came under my observation.

When I saw her in the above condition she had a systolic blood pressure of 225, and diastolic of 100. Urinalysis showed great quantities of sugar. She had suffered great pain since the gangrenous lesions had appeared, had a poor appetite, and was in a very feeble condition.

Due to the above condition, on July 7th, under local anaesthesia, I ligated the right femoral vein just below Poupart's ligament. The only change noticed following the ligation was that the foot and limb, which were constantly cold prior to ligation, became warm. The gangrenous tissue on the toe was removed and sterile dressings applied.

One week later, under local anaesthesia, I ligated the left femoral just below Poupart's ligament and removed the gangrenous tissue at the line of demarcation and applied sterile dressings. The same observation as in the right leg with the filling of superficial veins was noted.

She was put upon a sugar-free diet and the wounds dressed daily. The wound on the

second toe of the right foot from which the gangrenous tissue was removed at the time of ligation was healed at the end of three weeks and the wound on the left foot was almost healed. The patient was up and going where she pleased, and felt so much improved that she would go home and began eating any and everything she desired, especially sweets, with the result, due to poor dressing and improper diet, that the wound on the left foot became infected and slowly and gradually the entire left foot and ankle became sore and swollen with several gangrenous areas which demanded amputation. This was done October 20, 1916. The stump healed slowly.

The patient's health is by far better now that when I first saw her last July. Her blood pressure, systolic, is 180, and she goes about the ward in a rolling chair or on crutches. She is still on a sugar-free diet.

The right limb is in good condition with the exception of a gangrenous spot, skin deep, on the ball of her big toe.

Case No. II.—A negress, approximately 85 years old. Family history negative. Wassermann negative. Past history negative, except two attacks of pneumonia years ago. The mother of ten healthy children.

September, 1916, she removed an ingrowing toe-nail. The toe was very sore following the removal of the nail, and November last she noticed the toe was turning black. The discoloration gradually spread until all her toes on the right foot were gangrenous, extending beyond base of each toe.

When she came under my observation four weeks ago, since giving Dr. West the subject of my paper, she had, beside the above condition of the toes, a gangrenous spot on her heel the size of a dollar and on the lower anterior aspect of her leg a spot of dry gangrene three inches long and one inch in width. She had not walked for some weeks and had two bad bed sores on her hips. On physical examination I found a large systolic murmur at the apex of the heart, which I took to be mitral, with a systolic blood pressure of 190 and diastolic 100. Urinalysis was negative except for a few casts. She suffered so much that it was necessary to give her morphia at times.

She being in a desperate condition and, needless to say, a very poor risk for surgical procedure, under local anaesthesia I ligated the femoral vein of the right leg just below Poupert's ligament and removed all of the toes at the metatarsal phalangeal articulations.

The wound at the present time is free from pus and looks healthy, but healing slowly. The patient is sitting up and going about the ward in a rolling chair.

On March 25th this woman developed what Dr. McQuillan, a neurologist, designates as nutritional dementia. She had to be restricted in bed, ceased to take nourishment, developed a hypostatic pneumonia, and died March 30th.

DISCUSSION.

DR. J. P. BAIRD, Dyersburg: When I saw my name on the program to open the discussion on this paper on gangrene of the feet, I did not think that so much could be said on such a subject. But the doctor has given us an exceptionally good paper, and it seems as if there is nothing left to say regarding it.

In most of the paper he was dealing with a new treatment of gangrene which seems as yet to be in the experimental stage. The two cases which he reports in his paper seem to have obtained some temporary improvement, but as both of them terminated in the way that most cases of that nature do, we do not see much to take up or commend in that line of treatment unless we have more cases on which to base conclusions.

The various forms of gangrene, whether dry, moist, or due to an infective process, all result from a mechanical condition which interferes with the circulation to the part, and produces a lack of nutrition and death of the part. Any condition, of course, which damages the artery, either by pressure on it, or by an obliterative endarteritis, or any injury which partly destroys the artery, will produce a lack of arterial blood supply to the parts, the anemic condition will go on, and we will usually see the dry form of gangrene. In old people it is usually spoken of as senile gangrene, and these cases usually have more or less of an arteriosclerotic condition of the vessels and sometimes a diabetic condition.

In some cases due to injury we will get the result, as in a case I saw recently in which there was a compound fracture of the femur with an injury to the femoral artery, which caused a slow, dry form of gangrene of the foot and leg.

This injury was not complete as far as destruction of the artery was concerned, but the damage caused a thrombus to form with slow destruction of the blood supply to the feet, which took eight or ten days to set up a gangrenous condition with demarcation. It started with a dry, horny condition of the toes and foot, which later, from the infection which set up, caused a gangrenous condition with a line of demarcation above the knee. Amputation at the point of fracture, the middle of the thigh, resulted in the patient's recovery.

There are some points about an amputation which it is a good thing to remember. Now all of us see an amputation occasionally in the middle third of the lower leg, or in that locality, for gangrenous foot or toes. We have seen amputations of that kind which had to be repeated above the knee, and at that time it is very frequently too late.

I want to emphasize the point that in any gangrenous condition which passes beyond the base of the toes, it is a safe rule to amputate at or above the knee. The popliteal artery is very large and patulous, but just below the knee it divides into three branches and any place below that a slight obstruction will take away the nutrition of a part of the limb below and produces gangrene. For that reason, it is a safe rule to amputate above the knee.

DR. E. T. NEWELL, Chattanooga: I have enjoyed the paper of Dr. Haskins very much, and the subject of blood vessel surgery is one in which I am very much interested.

It is a rather strange thing that the cases we see mostly are those of Russian-Jewish descent, but it does not necessarily mean that they are foreign-born. They can be born in this country and still have this obstructive condition in their blood vessels. I have in mind the case of a man who lived in New York who has this trouble, but he was born in Memphis. His ancestors were of Russian descent.

The treatment Dr. Haskins has outlined here, following DeWit Stetten and Horsley is ideal, and one we should try before doing a more radical operation above the knee, as Dr. Baird has suggested, where the gangrene has progressed above the joint. This operation can be done in one of three ways and it depends upon the method which you are most familiar with and that you prefer.

Bernheim of the Johns Hopkins speaks of the great benefit of venous anastomosis and, contrary to most surgeons in this country, particularly vascular surgeons, believes that anastomosis of the femoral artery and vein carries the

blood down to the toes or away down into the affected parts. Horsley and other men who have made a great many experiments, as outlined by the essayist, claim that the blood only goes eighteen inches down and they have proven this experimentally. That is one method of arterio-venous anastomosis. Then you have the vein and artery, a direct anastomosis, an end-to-end anastomosis, which can be used. There is the method of Matas of New Orleans and Carroll, and also Halsted, in which you can use the Matas-Carroll aluminum band. Instead of ligating the blood vessel and burning the bridges behind you, they put on an aluminum band, which constricts the vein, and you can put it on tight enough to completely cut off circulation in the vein, producing a clot after a reasonable time, or you can apply the band so loosely that a minimum amount of blood will be allowed to escape through the vein and maintain its integrity and you get almost the same result. You get the damming back of the blood. This is the keynote of the treatment together with free flow of polulum to the tissues.

This condition is a very painful one if it has persisted for some time, and the patient in nearly all instances becomes addicted to some narcotic. Most of the cases I have seen, which are very few in number, have manifested pain which is so severe that they contracted the habit of using morphin.

In regard to the treatment, you must consider not only the mechanical obstruction which you obtain by the damming back of the ligature or the Matas-Carroll band, but you must make the heart bound with some good heart stimulant, such as digitalis, or something of that character, to force the blood through the tissue.

Dr. Ernest LaPlace of Philadelphia believes that if we keep a pabulum around the diseased area of the character of the ascitic fluid or other fluids which he has gotten, that these assist materially in the healing. The main point in treatment is to dam back the blood and the heart pushing from behind with the ligature or Matas-Carroll band damming back the supply from going into the vein, dilates the capillaries and anastomoses, and makes new routes. Another good adjunct is a hot air bath, produced in almost any way, putting the patient in an electric light cabinet or with hot moist heat. However, dry heat is preferable.

DR. HASKINS (closing): I have nothing further to say upon the observation of these two cases. Having failed to relieve the condition by local applications of heat, administrations of Ringer's solution, etc., the ligation of the femoral vein will accomplish all it is possible to accomplish in this class of cases.

The reason I amputated the old lady's limb at the junction of the middle and upper third was due to her condition. Most authors recommend going above the bifurcation of the popliteal, but of course the higher you go the more the shock following the operation.

HAY FEVER—A NEW TREATMENT.*

By T. P. Miller, M.D.,
Knoxville.

Hay fever is so well known and so many people suffer from it that it is put on the front page of the newspaper by the cartoonist and there are organizations known as "Hay Fever Clubs." It is treated with less satisfaction to the patient and more cures from the doctor's standpoint than any of the common maladies.

It is called hyperesthetic rhinitis, sensory rhinitis, vasomotor rhinitis, and from the relief some people get by changing their location, it may also be well to call it "climatic rhinitis."

It is truly known to be a hyperesthetic condition of the nose, and a volume of portable size would hardly hold descriptions of all the different treatments that have been tried or suggested. The mails are full of literature advocating different treatments, all of these reporting so many so-called cures, but there has never been a specific cure for hay fever that I have been able to find. Some authorities have said to select the serum to use by scarifying the arm at different places and at different times and apply different serum. The one producing the greatest reaction is the one to use. Other authorities have said that hay fever is a constitutional disease and caused by uric acid. For this a half teaspoonful of soda three times a day was prescribed. I had a patient once that cut this out of the paper and took the soda, but I could not see that it helped him one bit.

One biological house reports a large per cent of cures with its serum, and says those

*Read before Section on Ophthalmology and Otolaryngology at annual meeting of Tennessee State Medical Association at Nashville, April, 1917.

that were not cured had some malformation. Personally, I have found all cases of hay fever to either be a malformation or a very close nose. There is a condition in all cases of hay fever of highly sensitized parts of the mucous membrane supplied by the olfactory nerve. This is caused in all cases I have seen by a malformation of the nose. This malformation can either be an enlarged superior turbinate, a deviated septum or a very close nose. At any rate, there is a pressure between the superior turbinates and the septum, causing a highly inflamed and sensitized condition of the mucous membrane at the ramifications of the olfactory nerve. I have had people tell me that they have seen sufferers from hay fever that had a very large and open nose. That is so. I have seen numbers of patients who had the inferior turbinates removed long before and had a perfect breathing space, but up in the roof of the nose, in the great plexus of the olfactory tract, are the superior turbinates, tightly wedged in against the septum, congested and highly sensitized—and these are the ones that have hay fever.

It is not so very easy to see this part of the nose. Ordinarily, one looks along the respiratory tract and, if that is open, it is passed up as a perfect nose, but I venture to say that any patient suffering from hay fever has a congested condition of this special part of the nose supplied by the olfactory nerve, and that this congested condition is caused by a malformation of some kind that makes two surfaces of mucous-membrane rub together.

The same people live in the same climate, breathe the same atmosphere, eat the same food, and do the same things—yet some have hay fever and some do not. The reason is that some have this condition I have spoken of in the roof of the nose and some do not. This condition does not interfere with respiration in the least, nor does it interfere with the external appearance of the nose, but these persons pay dearly for it when the hay fever season appears. I mean by that, this inflamed and sensitized condition of the upper part of the nose is there all the time. Some are so bad they sneeze and have this trouble

all the year through; some—and I might say the majority—are not so bad and only have this fit of sneezing when pollen is liberated from the vegetation.

Treatment.

There has been a great deal said recently of different treatments for hay fever by the use of serum made from different bacteria and different pollens. I have used them; always accompanying the hypodermic with local treatment in the nose. I have even used autogenous vaccine, and find that it has the same effect that influenza bacterin has on a cold—keep up the treatment until the season is over and your patient gets well, but next season you have the same thing. From the reports just gotten over the 'phone from a patient I had five years ago with hay fever, there has been no return whatever of the trouble, and this patient says, "In addition to that, Doctor, I have not had a cold anything like as much as I used to have."

But I say, gentlemen, after trying all of these many different treatments and getting no permanent results from any of them, that hay fever is strictly a local, highly sensitized condition of the upper part of the nose supplied by the olfactory nerve. I have a picture of the side of the nose here, showing all the different nerves, and I would call your attention particularly to the olfactory nerve and its branches. It has branches equally distributed under the mucous membrane of both the septum and superior turbinates, so you can easily relieve a pressure there without destroying the sense of smell. I have seen the sense of smell destroyed by a severe blow on the head, rupturing the olfactory nerves as they pass through the cribiform plate of the ethmoid bone, but have never seen it done by removing enough of the parts to relieve a constant irritation at the peripheral endings of the olfactory nerve.

If you have an enlarged superior turbinate, remove it and you have just as many nerves left on the septum of the same side to supply you fully. If it is the septum that requires the surgical interference, you have enough nerves left in the turbinates to fully supply, and surely you will not be obliged to remove both groups of nerves from both the tur-

binates and the septum.

One case I wish to report: A woman, about 45 years old, had suffered until she was badly emaciated and unable to perform her household duties. She had tried all the treatments she had ever heard of and gotten no relief whatever. When she first came to me she would not listen to anything pertaining to surgery, but finally heeded my advice. I reduced the parts of her nose causing the trouble and she has not had any return since. That was four years ago.

Another case: A prominent attorney of my town had both inferior turbinates removed several years ago, had a perfect breathing space, and would not believe any further destruction of the mucous membrane of the nose was indicated. After treating him for some time, he allowed me to reduce the pressure and has passed two seasons without an attack. And so on down the list.

Another patient I had recently told me that he was a great sufferer from hay fever years ago, but sprayed his nose with adrenalin chloride for several years, and now he is never troubled with hay fever. From what this man told me, I inferred that he used this adrenalin chloride for such a length of time as to atrophy the mucous membrane sufficiently to relieve this hypertrophied condition and obtained the same result as by the different method I advocate.

The disadvantage in this method, as you all know, is, first, the length of time required to accomplish the desired effect, and, second, the uncertainty of what you may do by turning a spray of adrenalin chloride into your nose to effect all parts thereof for several years.

I would do this either with a cutting instrument of the desired shape and size, or with an electric cautery; or, if the nose will permit, the desired effect can be had by the proper application of tri-chlor-acetic acid. The method used must be selected by the surgeon after examining the nose.

By the proper use of one or the other of these methods, with a patient who really has hay fever, you will have a patient who will feel an eternal debt of gratitude towards you.

DISCUSSION.

DR. MCKINNEY: I was expectantly awaiting the announcement of Dr. Miller's treatment of hay-fever, hoping that he had something which might win for him the prize of one hundred thousand dollars for a cure of this disease, offered by the American Hay-Fever Association, but instead of that, I found that he merely made suggestions along the line of therapy that we have been using a number of years, and have practically discarded, since we found that the condition returns again and again after this treatment. There is nothing new in cauterizing the upper portion of the septum and turbinates with the acid or electro-cautery for this condition, for this has been used for a long time. Many turbinates also have been sacrificed in the endeavor to remove the cause of irritation in hay-fever, but this proved just as futile as the other measures. Every once in a while some form of treatment is brought out which may relieve some cases temporarily, but almost without fail there is recurrence. Vaccines and pollen extracts have relieved some cases, but there is almost invariably a recurrence, showing that these have no permanent value, but probably have some psychological effect. At the annual meeting of the American Laryngological, Rhinological and Otological Society, held at White Sulphur Springs last May, there was a very extensive and exhaustive discussion of the treatment of hay-fever, and the value of calcium chloride or lactate, given in large doses, both before and during attacks of hay-fever, was emphasized. This treatment may be given in conjunction with any other form of treatment, and very favorable results were reported by a number of the speakers. Treatment of this kind, with placing of the nasal cavities in as nearly normal condition as possible by removal of spurs, deviations of the septum, etc., is the best form of treatment where the patient cannot obtain a change to a higher altitude.

O. DULANEY, M. D., Dyersburg: I certainly do not want this to go as the doctor has reported. I have had some little experience for a few years with hay fever myself, and I have visited some good clinics, and from the observation that has been made by the best rhinologists in the country, I cannot agree at all with Dr. Miller in his method of treatment. Evidently all the rhinologists throughout the country, knowing the pathology they do, of the mucous membrane of the nose and of the turbinates as we find them, some of them would have accidentally hit on to this treatment and gotten some results. Trichloracetic acid has its place, but when it comes to a surgical condition it is not worth two cents. If you have a hypertrophy of sufficiently long standing there is nothing in the world going to relieve it but the knife, or some surgical method, because in burning this with trichlor-acetic acid, it does produce scar tissue which will later cause trouble itself, and you will have more

trouble from that hypertrophy than you do if you remove it by an instrument. So I do not personally want to let this go. I don't believe that the success that the doctor has had at all is due to what we call a true hay fever, but it is just an acute intumescence of the tissue, an acute condition relieved by the mild treatments that he has given. But I live in a country where we have lots of hay fever, and I want to say to you that everything under God's shining sun fails. I have never seen anything I thought would give them relief every time. Sometimes they are relieved temporarily by some little mild treatment. When you think you have a case under control, they go all to pieces. So my personal experience does not bear out his investigation.

DR. CHRISTENBERRY: I think the very line that Dr. McKinney touched upon is the fact of the acidosis theory, and anything that will relieve the acidosis will help to relieve these patients by the change in the blood, helps to relieve this condition. That brings us back to Fisher's work again.

DR. N. C. STEELE: Mr. Chairman, I think Dr. Miller has made the only original suggestion that has been made here during these two days. I do not know anything about it, but if he is correct it is wonderful. I am going to try not to be skeptical about his claim although I grow more skeptical as I grow older. When young I believed everything I heard an old doctor say or that I read in a medical book, or journal, but I do not now.

Some of us have been cutting, burning and otherwise maltreating the interior of the nose for years trying in vain to cure hay fever, but we have not been attacking the region Dr. Miller speaks of as the seat of hay fever, the upper third, the olfactory region.

There is not a book which discusses hay fever that locates its seat in that region.

I think if I had hay fever I would go straight to Dr. Miller, for all others of us acknowledge we can not cure it and he asserts positively that he can cure it.

Anyway, I am not going to criticize Dr. Miller about this upstairs, olfactory region treatment of his until we hear further from it.

Let us hope that he has made a valuable suggestion as to the treatment of this distressing affliction.

DR. G. C. SAVAGE, Nashville: Dr. Steele has struck the right sort of note. He and I are not so old yet but what we believe everything that we hear if we know it is right; if we know it is wrong, we don't believe it. But we have no means of knowing whether Dr. Miller is right or wrong. But I believe he has come before us expressing a conviction that has come to him from experience and observation. I think that it is the best thing you fellows can do to go back home and try to remember what he has said, and try to relieve some of

your cases by the line of treatment which he suggests.

While you are trying to find out what will cure these poor sufferers, give them such relief as you can. One-tenth of a grain of sulphate of atropia to an ounce of water, one drop every 5 minutes for five doses and repeated in half an hour to an hour if the stuffiness and sneezing return, is the best I have found. Let the patient take this mixture along with them and keep it ready for use when they feel an attack coming on. It is only one-five thousandth of a grain that they get at a dose, and when they take five doses they have only one-thousandth of a grain. There is never any danger of reaching the poisonous effect of the drug, it is too weak. I have had some patients treat themselves in that way for one season, and then another season to find that it is growing less severe every year. Some have eventually freed themselves from the suffering. I think that this experience goes far toward substantiating Dr. Miller's theory of congestion of the mucous membrane covering the turbinated bones. I had never thought about the trouble being located so high up; I thought it was the delicate endings of the fifth nerve that became irritated. The fifth nerve never smells feathers or ipecac, and therefore the hay fever that comes on from the odor of feathers or ipecac, must be charged against that part of the membrane where the olfactory nerve endings are located. I glory in the spunk of the doctor, and I think he will come back at you with a fourteen centimetre gun in a few minutes.

DR. W. LIKELY SIMPSON, Memphis: The sneezing is a very marked symptom in hay fever, due to an irritation of the fifth nerve, but it is an accepted fact that it has nothing whatever to do with the olfactory nerve, which has only to do with the sense of smell.

DR. G. E. VAUGHAN, Clarksville: I think Dr. Miller has the two conditions—ethmoiditis and hay fever, confused. As you know the symptoms are similar and in some instances both diseases are present, but the etiology and pathology are entirely different. Removal of the middle turbinate or exenteration of ethmoid will effect a cure in ethmoiditis, but accomplish nothing in the true type of hay fever except relieve pressure symptoms.

I simply wish to emphasize the value of hot saline irrigation in acute cases. I have had patients to be relieved and go to sleep by this treatment when morphine failed. In regard to the submucous resection in sinus infection I have noticed some unfavorable reports and would suggest postponing the operation until inflammation is at low ebb.

DR. THOMAS P. MILLER: Mr. President and Gentlemen—Somebody says that sneezing is brought on by the fifth nerve. How do you make

that out? You smell by the olfactory nerve, don't you? You smell a little pepper, you sneeze, don't you? Sir? Who was it said that?

MR. VAUGHN: I didn't say it; I don't agree with you, however.

DR. MILLER: Well, what makes you sneeze? You take a cotton-tipped probe and run it up there and it will make you sneeze.

DR. VAUGHAN: That is mechanical irritation.

DR. MILLER: I know it is, mechanical irritation, but it is on the first nerve, it is not the fifth nerve, either. The ethmoid, you talk about removing the middle turbinate and then go up there and remove the superior turbinate; well, what do you want to do that for? In the first place, your superior turbinate is the thing that ought to be removed; all the infection you have come from up there, but inferior turbinates interfere with your proper breathing. Just cocaine these and contract them and go up there and remove that superior turbinate. How many people who operate for a deviated septum ever go up there and remove a perpendicular plate of the ethmoid bone? You remove the cartilage; that is all that is necessary in the majority of cases, and that lets you breathe all right. But away up there at the olfactory nerve, if that perpendicular plate is crooked you ought to remove it. You remove that and you will not have to remove the superior turbinate.

Now what does this atropia do, Doctor? Just exactly what I said ought to be done by surgical means; only the surgical means makes it permanent. Atropia does the same thing, but it is only temporary. You do that today, and if it relieves the patient this season, the next season you have to do the same thing; but it does exactly the same thing, it relieves the congestion sometimes. I say the surgery will do it and it will do it permanently.

"Cutting in the wrong place,"—I don't know what that note is for, but that is what a lot of us do. This is original; it is my own idea; I didn't read it from a book, or anything! but I have the facts. I have done that thing with patients, and I can refer you to any of them, and you can take their word for it. It has relieved them, and relieved them permanently. Not this season, but forever, I hope. Now one of them has been five years and never has come back. Trichlor-acetic acid,—some one said something about that. What was it?

THE CHAIRMAN: Dr. Dulaney said it wouldn't do any good.

DR. VAUGHAN: Yes sir.

DR. MILLER: Where did you try it?

DR. DULANEY: Where I thought it was indicated.

DR. MILLER: Where did you think it was indicated.

DR. DULANEY: I don't think it is indicated anywhere very much now.

DR. MILLER: Where did you try it? Don't tell us where you thought it was indicated, but tell us where it was.

DR. DULANEY: It was because we used to use it sixteen or eighteen years ago.

DR. MILLER: Tell us what part of the nose you tried it on?

DR. DULANEY: If the gentleman is going into that kind of a discussion, it says that whenever you examine a nose you are supposed to look into the pathology of the nose. It is a fact that the nerve supplies the sensation to the mucous membrane of the nose is not the same nerve that you use in smelling altogether, but you claim that it is. You go on with your olfactory nerve.

DR. MILLER: The olfactory nerve is what makes you smell.

DR. DULANEY: I understand; but that is not what makes you sneeze by any means.

DR. MILLER: Yes it is. It conveys the odor or sensation; stimulates the fifth nerve and makes you sneeze. Run some cotton-tipped probe up a nose, of course it will make them flinch; but you put it away up there in that olfactory nerve, and see if it don't make them sneeze. I have tried it lots of times; it always makes them sneeze. Sure. That is the sum total of the whole thing, that it is an inflammation. I have tried it. It is an inflammation in the ramifications of the olfactory nerve that makes people sneeze, makes them sneeze during the fall of the year, when the pollen is liberated, and it is very seldom you see a person who sneezes all the year round, but there is an inflammation up there all the time. Now these people that Mr. Dulaney called hay fever patients, it doesn't keep them from breathing, because their nose is open, gentlemen; but that inflammation is there, and it is never shown until the fall season comes along when the pollen is liberated, and they cannot stand it. I have had two patients that sneezed the whole year. Their noses were in the same condition; only worse, so bad that the thought of sneezing would make them sneeze.

DIET AND DISEASE.

W. Salant, Washington, D. C. (Journal A. M. A., August 25, 1917), calls attention to the increasing evidence of the role which diet plays in the causation of disease. He refers also to the investigations of Hunt, whose results indicate the importance of diet as a factor in determining the toxicity of some poisons. In experiments on mice that were fed a large number of different substances, Hunt found that the reaction to acetonitril varied considerably with difficult diets, some of which increased the resistance and others lowered it. Salant also refers to a number of papers by himself in conjunction with colleagues having a bearing on this subject. While

our knowledge of the relation of diet to the action of poisons is as yet in its infancy. he offers the evidence collected in this article as a stimulus to further investigation of a difficult but very important subject full of promise of valuable results to medicine.

PRACTICAL ELECTRO THERAPEUTICS.*

By J. M. King, M. D.,

Professor Dermatology and Electro-Therapeutics, Vanderbilt University,
Nashville.

The first phenomenon relative to electricity was observed 600 years B. C. by Thales, one of the wise men of Greece. Experimenting with amber he saw some small bits of paper suddenly attracted to it. With this observation the subject rested for 2200 years when in 1600 A. D. Dr. Gilbert, Physician to Queen Elizabeth, took it up, coined the word "electricity" from electron-amber, and made many epoch-making experiments. Within a few years the first friction machines were made,—some of large sulphur balls, others of glass cylinders. These were the progenitors of our large plate machines of the present day. About 1800, Galvani and Volta made their discoveries from which developed the present-day ordinary cell or battery, in which electricity was generated by chemical action for the first time. Up to that time electricity had been made only by friction. In 1831 Michael Faraday brought into existence the induced current which is the same kind of current we use today in the small medical battery outfit and in the large X-Ray and wireless telegraph coils. In recent years the high frequency current has been worked out through the labors of D'Arsonval, Oudin and Tesla. Then, in 1895, the greatest discovery in electricity for centuries was made by Prof. Roentgen, while experimenting with a vacuum tube made by Sir William Crookes, an Englishman.

In this epitome I have recounted only the discoveries of the fundamental principles relative to electricity, which has at last become the hand maiden of medicine. Electricity has had a long struggle to get into regular medicine,

because for two and a half centuries it was used largely by quacks and charlatans in the treatment of diseases, and thereby it became discredited and was held in disrepute by the regular profession. But finally, out of these years of haphazard application, a sound system of electro-therapeutics has been established which is recognized by the entire medical profession. However, many physicians still hold prejudices against electricity because some enthusiasts greatly exaggerate the therapeutic value of electricity. Electricity should be regarded only as any other therapeutic agent, just as we value digitalis, strychnine, massage, etc., and all other medicines.

The idea that electricity is to be considered as an entire system of practice within itself is absurd. It is to be used in conjunction with the approved principles of medicine, along with the administration of other remedies indicated by the case in hand. Electricity should never be used when there are other superior remedies. With this conception of the subject the regular practitioner finds daily use for some form of electricity, especially in office practice. He would be able to treat more successfully certain cases by the application of the proper form of electricity than he would without it.

The strong plea that should be made is that electro-therapeutics should be so practical and so well understood by all, that it could be prescribed and used as easily as strychnine, calomel or any other drug and in conjunction with regular practice. It is truly only an aid to the practice of medicine, which means the use of all remedies at our command.

I shall present the subject by discussing the following forms of electricity: Static, galvanic, faradic, sinusoidal, high frequency and X-ray.

Static electricity has been practically displaced by the high frequency current. Static electricity is of very high tension, the voltage being very high. So is the high frequency current. The local and general effects of the two currents are very near the same and will be discussed under high frequency.

The galvanic current is used in several different ways. First, for its electrolytic effect in the removal of growths on the skin and mucous membrane. It is the best means for removing warts of venereal and of the verrucae

*Read at annual meeting of Tennessee State Medical Association at Nashville, April, 1917.

vulgaris type. Flat warts and senile warts are better removed by other ways. This current is very effectual in removing carbuncles, a number of which I have successfully treated with it. When the patient will not submit to surgery, external hemorrhoids and selected cases of internal hemorrhoids can be successfully treated in this way. Elevated moles of all sizes and color, large elevated birth-marks are easily removed by the galvanic current. But naevus vascularis of the elevated type is better handled by the combined use of carbon dioxide snow and the galvanic current. All sizes of telangiectises, small angiomas and the enlarged red nose rhinophyma may be reduced by this means. This is the best means for removing xanthoma of the eyelids and is the choice way for destroying the growth of superfluous hair. The galvanic current is valuable in persistent vomiting of pregnancy. I have seen cases relieved after the ordinary drugs had failed.

The usual technique for using the galvanic current is as follows: Local anesthesia is employed. The positive pole is held by the patient and the active needle is used on the negative pole, or needles on both poles may be applied to the same growth. In this case the positive pole must be attached to a platinum needle and is allowed to remain still while the negative needle is pushed through and through, back and forth, so as to bring it in contact with all the cells of the lower layer of the growth—either small or large. By this means the life and integrity of the cells are destroyed. The electric current itself is destructive, and in addition to that there is the process of electrolysis by which the chemical compounds in the tissues are separated from each other. Sodium and potassium are set free in the tissue. As a result of this process the entire mass of tissue treated dies and separates from the surface, leaving as a rule a soft, smooth, elastic scar. Occasionally on the front of the chest a keloidal scar will follow this operation. The current strength varies from 1 to 20 milliamperes.

At this juncture I wish to call your attention to the electric cautery, which may be used on either the galvanic or alternating current. Cautery points varying in size from the point of a lead pencil to that of the little finger may be used. This gives an excellent means

alone for treating very small skin cancers—say the size of a bird or squirrel shot. Cancers of larger size should be treated in other ways. The electric cautery is my favorite instrument in removing epitheliomata that are to be treated later with X-ray. The advantage in the cautery is three-fold—the growth is removed with scarcely any hemorrhage, no living cancer cells are left on the surface of the wound, and the destroying power of the heat extends far beyond the borders of the wound. The entire ear or areas two inches in diameter, part of the eye lid or the whole lip may be easily removed with the cautery. The cautery is especially adapted to removing warts on the sole of the foot, being the quickest and most positive method.

The galvanic current is used for cataphoresis, that is the introduction of medicine into the body through the skin by the current, but I must say that I have very little faith in this procedure as a practical method.

The galvanic current is to be used in cases of paralysis when there is no contraction of the muscles to the application of the faradic current. By persistent use of the galvanic current in some cases such muscles may be finally restored to some activity, then the faradic current should be used along with the galvanic. In paralysis from anterior-poliomyelitis electricity should be used persistently before the case is abandoned.

The faradic current is entirely different from the galvanic. It is an alternating current and has very high voltage. It has no polarity. It should be used in cases of partial paralysis. The galvanic current should be applied in total paralysis in order to restore the path of nervous impulse, then the muscle will contract, when the faradic current may be more effectually applied than the galvanic for the special effect upon the muscular tissue itself, producing stronger muscular contraction, bringing about more nutrition and a quicker restoration of the muscular tissue to its normal condition.

The faradic current is very useful in its general tonic effect upon the body in states of general debility applied by the method of general faradization. In the application of this method general medication such as is indicated should accompany it, just as in all other

uses of electricity, which should be considered only as one of the therapeutic agents to be used by all physicians.

The sinusoidal current is an alternating current generated by an alternating dynamo, but of very slow alterations and of low voltage as compared to the faradic current. Its use is more limited and from a practical standpoint is the same as the faradic current in its effect.

The high frequency is different from any of the other currents and is more like the static current in its special properties. Its name implies rapid alterations, or oscillation, which run into millions per second with thousands and millions of volts. The generation of this current is too intricate to explain here, but I might say that the machines used for its generation are small, well constructed and easily controlled, and also may be used for light X-ray work. The current is applied locally for certain local conditions and in a general way, called auto-condensation, for its general effect upon the body. This current being of such tremendous voltage, amperage and frequency, produces, either locally or generally, marked increased activity of all cellular processes.

When used locally the current is applied through a glass vacuum electrode placed in an insulated handle so that the user may move the electrode from place to place in its application. The skin to which it is applied becomes red, heat is increased, ozone is generated on the surface, the muscles contract, the nerves are stimulated, and cellular action increased. When thus applied locally the patient is charged throughout the entire body.

Local conditions to which this current is applicable are as follows: Neuritis, sciatica, neuralgia, lumbago, torticollis, chronic basal headache and acne.

The general conditions to which this current, so far, has been found applicable are those resulting from disturbed metabolism and lowered physiological activity such as diabetes, gout, arterial tension, arteriosclerosis, chlorosis, and insomnia.

The general application is made by the method known as auto-condensation which means this: One pole of the machine is attached to a large sheet of zinc 2 ft. by 5 ft., with a pad three inches thick built on top of it. The patient lies on this pad or cushion

and holds the other pole of the machine in his hands. Thus placed the patient is charged and recharged a million times per second. The effect of this kind of application is to increase general cellular action which is evidenced by a rise in temperature, increased output of carbon dioxide and of urea.

The X-ray is of more value and service to medicine and surgery than any one feature of electricity, practically every branch of medicine and surgery calling upon it for aid. The X-ray has a special therapeutic value as well as the power to make pictures on the photographic plate. It is useful in certain diseases of the skin, as in acne, rosacea, psoriasis, lichen planus, in certain forms of eczema, lupus, ring-worm, syecosis, blasto-mycosis, bromide eruption, epithelioma and sarcoma. Breast cases should always be treated after operation in order to prevent all possible recurrence. Even deep-seated cancers should be treated by the deep X-ray therapy. Splenomyelogenous leukemia is greatly benefited by the X-ray, as also is Hodgkin's disease.

The X-ray for the relief of pain has been useful in obstinate facial neuralgia and in sciatica.

We are familiar with the use of the X-ray in radiography fractures, teeth, stomach and intestinal work, sinuses, chest, renal calculi, and gall stones.

Before closing I must say a word about the X-ray and cancer. Some members of the profession still have doubts as to the real curative value of the X-ray in the treatment of cancer. I can assert with the greatest emphasis before his body of physicians that the X-ray is the best agent we have today for treatment and cure of superficial cancer. I can state this from observation and from my own experience in the treatment of more than a thousand cases of all types. The Coolidge tube has made the X-ray about as powerful as radium. The application of pastes and other local remedies are to be left to the past. Certain cases should be operated and followed by the X-ray in strong dosage.

In presenting these few remarks, I have attempted to recommend such treatment as is practical and reliable. So much is recommended in texts on this subject that we would never think of using as practicing physicians;

however such treatment might be used in special institutions. I have intentionally omitted technique, as that in detail can be obtained from texts.

It is a beautiful view to look back through the centuries and see the different energies developing and coming together, adapting themselves to each other and finally blend and mould into our noble profession of today. Law, art and literature have had no such history. Chemistry, born in Egypt, carried by the Saracen invasion across Northern Africa and into Moorish civilization of Spain from whence the science spread to central Europe and there perfected, has become the master key with which we unlock many mysteries of the art of healing. Electricity from its small beginning in the hands of Thales of Greece 600 B. C. has developed through the centuries by the efforts of Gilbert, Gray, Galvani, Volta, Farady and our own Franklin until today it is one of the most powerful agents in our civilization. Chemistry unravels many mysteries of the ages, electricity places unbounded energy at our command, both starting from divergent points are now inseparably bound up with practical medicine.

DISCUSSION.

DR. R. W. BILLINGTON, Nashville: I would like to discuss two points mentioned by Dr. King in his paper, one of which is poliomyelitis and the other is sciatica.

Poliomyelitis has been treated by electricity since electricity was used for anything in electrotherapeutics, and it seems that it is the fashion and custom for text-books, and particularly electrotherapeutic treatises, to advise the use of electricity in poliomyelitis. I think we fail to stop and think what we have to deal with; we fail to consider what the natural course of the disease is. Like the osteopath, we take credit for the normal improvement that always occurs during the first six or twelve months following the onset of paralysis, and we are apt to take unjust credit for the results that are shown in these cases. It is a well known fact that the destructive process in the spinal cord, the anterior horn, destroys some of the cells, while others are simply inhibited by the edema and infiltration that takes place during the acute infection. This infiltration and edema clears up slowly, and it is due to the fact that we have this natural normal course of improvement that follows the attack through a period of several months after the painful stage. While the action of the muscles is inhibited by the edema and infiltration, we

try to maintain the integrity of the muscle by massage, etc., but whether we can inhibit actual degeneration which takes place in the muscle which has been cut off in the nerve supply has not been proven. We make a mistake to say positively we can do that with electricity or anything else. If the muscle is only partially paralyzed, as is the case with most of the affected muscles, if the nerve supply is not completely cut off, some of the fibers retain their normal nerve supply and do not generate. The other portions of the muscle whose nerve supply is cut off do degenerate in spite of everything. Can we prevent that degeneration in that portion of the muscle that is permanently or even temporarily cut off from its nerve supply? That is the question we have not yet proven. So I say, let us not blindly advise electricity for poliomyelitis without understanding what we are doing and what we have a chance to do in those cases. If the muscle is not completely and permanently paralyzed, it can be improved by exercise, whether that is voluntary or passive, by massage or electricity, or what not. But active and passive exercise, guarding against over-use and tire, including muscle training, will accomplish far more than electricity and all the rest. Protection against overstretching by splints and braces is essential from the beginning. (Time called.)

DR. IRVING SIMONS, Nashville: I wish to call attention to the use of some of the currents mentioned by Dr. King in the field of genito-urinary work, particularly in the bladder. The D'Arsonval, as well as the Oudin currents, which are both high frequency in type, can be used to best advantage in bladder tumors. In these cases it has been found that destruction of the growths has been far more satisfactory than by any of the operative procedures which have been undertaken, especially in the benign bladder tumors, that is, papillomata. These currents are used through the cystoscope by means of insulated electrodes which are passed in the same way and directed in the same manner as the ureteral catheter, i.e. directly under the vision. These currents are not painful. They simply coagulate the tissue and cause the bladder tumor to slough away.

I would say that as far as cancer of the bladder is concerned, these currents should not be used, as they produce proliferation and have worked harm. The D'Arsonval current has been used to great advantage in facilitating the passage of ureteral stones that have been lodged in the ureter somewhere below the uretero-pelvic junction. By means of specially made sounds which are insulated everywhere except at the tip, where a bulbless metal arrangement is screwed on, these currents can be applied high up within the ureter, and the heat being gently increased, the ureter will dilate below the point where the

stone is impacted. In many cases this will facilitate the descent of the stone. Aside from that, the diathermic current, which is essentially no different from the D'Arsonval current, has been used in open operations on the bladder where large amounts of tissue must be burnt out. Here again it has been used in cancer, and particularly in very large papillomatous growths which we know occasionally fill the entire urinary bladder.

DR. KING (closing): I am glad Dr. Simons brought out the application of high frequency to the bladder. There were so many points to discuss that I could not bring them out successfully and clearly in the short time at my disposal.

In the application of the galvanic or faradic current in paralysis, the whole idea with the galvanic current is to restore the impulse of nerve energy over the break in the anterior horn, with the effort of carrying that impulse through, probably causing in its effort a reduction in the edema that is existing. It may help to remove the edema by increased elimination. We cannot say what amount of destruction there is. It is put down by the best authorities on diseases of the nervous system that paralysis resulting from anterior poliomyelitis is benefited by this form of electricity. All authorities urge that these cases should be treated for a prolonged period because cases that have been treated for a long time have been restored partially. We do not know what nature might have done, but it is our duty to use all means in our power in the treatment of these cases. When you apply electricity to a muscle that is paralyzed, you can contract it and in that contraction you certainly bring about the same physiological processes that you would do by actual exercise. You do increase the nutrition, and that is one of the functions of the faradic current, namely, to increase the nutrition of the muscles and prevent atrophy.

SOME DISEASED CONDITIONS OF THE EYE SECONDARY TO INFECTION IN OTHER PARTS OF THE BODY.*

By O. Dulaney, M.D.,
Dyersburg.

Diseases of the eye secondary to infections in other parts of the body may be classified as acute, subacute, and chronic, and the gravity of such depends entirely upon the nature of the original foci, and the ease with which they are located and removed, many of them being

overlooked. Many of us as ophthalmologists can look back to cases we have treated in the past as primary troubles, which today we would class as secondary infections. Having followed carefully the work which has been done by the leaders in the field of local infections, and having in a large number of cases, demonstrated to our own satisfaction the soundness of the theory, we give every patient who comes under our care a thorough and careful physical examination to determine if possible, the existence of a focus of infection, and if such a focus exist in another part of his anatomy, we take steps to put this region in as near normal condition as possible, either by surgical or other procedure, before we begin special treatment of the eye.

We must consider that the eye contains in its structure every kind of cell that is found in the body except bone, and that those in the eye have the same biological and chemic affinity for bacteria, toxins, and other bodies that the corresponding cells in other parts of the body have; and that any infection or toxin which has selected and attacked any tissue in another part of the body is very likely, at any time to metastasize and select the corresponding aggregate of cells in the eye for a fresh point of attack. From a close and careful study of a large number of ophthalmic conditions occurring in my special work, and with the assistance of Dr. Motley, pathologist and radiologist, who is associated with me in the hospital, we have been able to make a fairly accurate working diagnosis and have found, in the largest number of cases which have come under our observation, the location of the original focus and the character of the organisms which were the etiologic factors. From our clinical observation, the secondary ophthalmic conditions were due to infections in the following tissues, named in the order of their frequency: Tonsils, teeth, accessory sinuses of the face and head, suppurative middle ear disease, kidney, and alimentary canal.

The secondary troubles in the eye may be classified as external and internal—the external are those involving the lids, conjunctiva, cornea, iris, and sclera; the internal those involving the retina, choroid, ciliary body, and vitreous humor. These conditions are brought about as a result of a toxemia or bacteremia

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secondary to an original focus of infection which reaches the eye through the blood stream, is metastatic by the lymphatics, or is conveyed along the nerve trunks themselves.

Before going further into the discussion of secondary infections of the eye, I want it clearly understood that I do not claim that all the conditions reported in this paper are always due to the infections which are mentioned at this particular time, but my purpose is to report my own personal and clinical experience with some of these conditions and the results obtained after finding the original infections and the removal of them, and to bring about a discussion here in order to get the benefit of the observations of other ophthalmologists along this line. In this class of troubles, we must be able to back up our clinical conclusions with the more exact pathologic and bacteriologic confirmation. I have been prompted to write this paper on account of an epidemic of pneumococcal infections occurring in West Tennessee in the last two winters. Most of these patients were treated for laryngitis. We came in contact with quite a few of them on account of complications that ensued, some with eye symptoms, but more frequently with abscess of the middle ear. At the time I was consulted in 95 per cent. of the cases we were able to find the pneumococcus and bacillus influenza the predominating factors in the causation of these disturbances. Several of these patients that had the grippe, as it was called, consulted me several months later with eye troubles, and sometimes troubles with the nose and throat, stating that the disturbance dated back to shortly after having the grippe. In most of these cases during the past two winters we have been able to locate the original focus of infection without much trouble. In a small per cent. of the cases, we found infection to consist of staphylococci and streptococci, either alone or mixed with the pneumococcus. The eye symptoms described in this paper are those that are often associated with syphilis. But we may get a positive Wasserman reaction, and still the immediate cause of the trouble may be another infection. Syphilis in these cases undoubtedly favors the onset of the infection and so lowers the vitality of the tissues that they furnish a favorable soil for the infection to flourish on. Mercury

and the iodides will improve the symptoms, regardless of the direct cause. But there are some cases that such medication will not completely cure unless the original vegetable infection is removed. Then it will hasten the improvement. Mercury is especially indicated, and is one of our best therapeutic agents in the treatment of eye diseases, and the more acute they are, the better the results. The iodides are indicated in most instances after the acute inflammatory symptoms subside and improvement results more rapidly from their use.

The pathology found in the eye may be anything from a simple irritation of the different parts of the eye, to infiltration, thickening, and degeneration, with or without excessive secretion. These various pathologic changes each require certain methods of treatment to bring the case to a successful issue. The anatomy, and reference to the particular function of each part, will influence one as to the course to be pursued.

This report does not presume to present a complete survey of the pathologic changes that may take place as result of primary infection or the course of the different diseases in every instance, but only some of those pathologic changes which we have found and the evidence for the etiologic relationship of the primary infection to the eye troubles. In every patient a complete and careful physical examination was made in order to locate, if possible, a definite primary focus, and where such focus existed, appropriate measures were instituted to remove it. Where such original foci were found and removed, every indication pointed to a confirmation of the etiologic relationship existing between the original and secondary infections, and when only one focus was found and removed immediate improvement resulted, sometimes so quickly as to seem miraculous.

The following are some of the eye conditions which we found secondary to focal infections:

Conjunctivitis—Simple conjunctivitis, in every instance where it was found secondary to another infection, was found to be caused by the pneumococcus, but three cases came under our observation which were secondary to streptococcus infection of the tonsils. One case was secondary to a chronic case of gonorrhoea in which the gonococcal infection of long stand-

ing had become mixed with other organisms in the glands of the urethra and prostate and acted as a focus of infection. This patient first had arthritis and then the conjunctivitis, and was only improved by vaccines and treatment directed to the urethral infection. Several cases of follicular conjunctivitis occurred in children during the recent epidemic, and the organism was found to be the pneumococcus. After treating the upper air passages which were harboring the infection and administering vaccines, the follicles disappeared rapidly. Some pin-point follicles were observed on the turbinates in some of these cases, also large patches of enlarged lymphoid tissue were noticed all over the pharynx, not unlike the "clergyman's sore throat."

Scleritis and episcleritis. From my personal experience I have never been able to find an infection which I thought to be directly the etiologic factor in these conditions, but it is claimed by others that it is often associated with "rheumatism" and especially the arthritic form.

Iritis — Perhaps the most frequent inflammatory disease of the eye, I have found to be secondary to an infection elsewhere in the body. More properly it should be irido-cyclitis, for rarely the iris is involved without the ciliary body being also associated with it in the infection. The inflammation may be primary in the ciliary body and then later involving the iris—that is, in those cases not due directly to syphilis or trauma. Nearly all other iritis is the result of a secondary infection and can in most cases be easily traced to infected tonsils, teeth, antrum of Highmore, and other sinuses. I have failed to mention rheumatism in this connection, as rheumatism itself in the usual sense is due to a focus of infection some place in the body. The suppurating middle ear plays its part in this connection. Iritis occupies the same position in regard to other infections as does rheumatism, especially those infections where the cocci are the offending organisms. There is no inflammatory condition of the eye that responds more quickly to removal of the original focus, than does iritis.

Choroiditis—Both suppurative and non-suppurative forms have been observed. Several cases of the suppurating form resulted from epidemic cerebro-spinal meningitis, which occurred in Dyer County in 1913-1914. One pa-

tient, a young man, had an attack of chroiditis shortly after he recovered from meningitis. It started as the non-suppurative form, but rapidly went on to suppuration, developed panopthalmia, and I had to enucleate the eye. Another patient, a woman of forty years of age had a diseased antrum of a month's standing which resulted in suppurative choroiditis of the eye on the same side as the antrum. This also developed into panopthalmia and I had to enucleate. At the present time I have under observation two patients with the non-suppurative type of choroiditis, secondary to infected antra. One gives a history of antrum trouble for the past two years and the other is an elderly woman who claims to have had influenza in January, which soon developed tenderness over the antrum which lasted for several weeks, this being followed by "neuralgia" in the eye, so she said. I have had a few patients from twelve to twenty years of age in whom the choroiditis was easily traced to diseased adenoids and tonsils, and very gratifying results have been obtained by the removal of the diseased structures.

Secondary infections of the retina may be anything from a simple neuritis from an intestinal toxemia to an inflammatory condition with direct infection. When due to toxemia, the trouble is usually bilateral, the symptoms most pronounced in the right eye.

SUMMARY.

1. That inflammatory conditions of the eye are frequently secondary to infections elsewhere in the body, has been definitely proved to our own satisfaction, and eye infection being in a way metastatic from the original infection.

2. We wish to lay emphasis on the tonsils and adenoids in children as a source of infection in both follicular and phlyctenular conjunctivitis, also keratitis and choroiditis.

3. Close association and team work between the specialist and pathologist and internist is necessary to completely and satisfactorily determine the true condition existing in any case. In this connection I am indebted to Dr. Motley for his interest and careful and painstaking work with me in these cases.

3. In any inflammatory condition of the eye in adults, particularly where giving a history of previous rheumatism, it is imperative to closely examine the tonsils and other fre-

quent foci of infection, and, when found, to institute such procedures as are necessary to remove such infections.

4. The field of focal infections is as yet in its infancy and is fertile in possibilities for every man in every branch of medical practice.

DISCUSSION.

GEO. H. PRICE, M.D., Nashville: I would not have a word to say about this paper, gentlemen, except for just one or two points. In all of these inflammatory conditions which are external to the eye itself, that is, in the conjunctiva or in the lacrymal apparatus, are infections produced by getting the infectious material into the eye, but not through the circulation nor through the lymph. You can have a pneumococcal infection or a streptococcal infection, or any other kind of infection that you have in the patient, but such infections do not reach the conjunctiva through the lymph circulation. That infection is gotten into the eye through putting the fingers or hands to the eye; it does not get there through the general circulation or lymph.

The lymph circulation, from the adenoids and from the tonsils and from the teeth, is always downward and not upward, and after it is emptied into the general lymph current the lymph circulation pours into the right and left subclavian veins; it is then done for, so far as the lymph circulation is concerned. Should such infection not be destroyed, it may involve the eye later from metastasis through the blood current, but not through the lymph. I have seen a number of cases in which chorioiditis was present; but if infected tonsils and adenoids were the sole cause, or one of the great outstanding causes for this condition, then nearly all children would be subject to this condition, but they are not. It is a rare thing to find it in children. The doctor is living in a territory where they have been infected with the meningococcus and I suspect that a large per cent of those cases have come about in that way, and not due to ordinary irritation of the tonsils, adenoids and teeth, because the lymphatic circulation does not go that route.

DR. DULANEY: Don't they maintain a theory in lymphatics that the lymph often travels upward in the lymphatic circulation?

DR. PRICE: As a rule, I don't think that is true.

DR. DULANEY: That is the latest literature in regard to it. How does it pass from the urethra or the bladder up through the kidney?

DR. PRICE: That goes by the blood route, the return flow from all the general lymphatic circulation, from the abdominal region and practically all below the upper portion of the right side of the thorax, is largely through the receptaculum chyli and empties into the left subclavian vein. If you have infection from the micro-

organisms that travel in the blood, you can get it in the blood, but not from the lymph, and these infections that are now under discussion are infections from external routes and not by metastasis. I am very glad indeed that the Doctor brought out these points and brought this paper up for discussion; but I think we make a mistake if we presume that a man with pneumonia is going to develop a conjunctivitis through the lymphatic circulation or through the blood circulation. I think the pneumococci get on his hands, or pass through the lacrymal apparatus from the nose, and thus they reach the eye and produce these conditions.

DR. BLUE: As far back as the middle of the last century—1845—in a book published then, Watson's "Practice of Physic," you will find that he mentions there that he believes that gonorrhoeal eye disease is a metastatic disease from the original gonorrhoea to the eye. We are working on something that has been thought of a long time ago. I have enjoyed Dr. Dulaney's paper and think it is a good one.

HILLIARD WOOD, M.D., Nashville: I want to say that is one of the most interesting papers that I have heard. It is a magnificent paper, it is right in the forefront of our work. I do not want to discuss it, but I just want to thank Dr. Dulaney for it; it is certainly food for thought.

DR. DULANEY (closing): Mr. Chairman, whenever a man begins to discuss infection with metastasis and things of that kind, he is up against a proposition. I have studied infections for a long time, for the simple reason that it has been of special interest to me on account of an infection that I had myself, and the peculiar infection started from a cut on the lip and I have had nearly every kind of complication, from cholecystitis on down, that you can think of, even an appendix removal due to secondary staphylococcus infection.

In regard to the eye conditions, we know how the cornea is supplied. The cornea is in four layers and is supplied with nourishment only by lymph, is it not, Dr. Price?

DR. PRICE: Yes, sir.

DR. DULANEY: I know this, around the periphery of the cornea in these infections you find: (1) the ulcerative process or phlyctenular begins at the sclero-corneal margin, gradually extending to the center and deeper layers of the cornea from a secondary infection, the same as in iritis or in cyclitis or in any of those inflammations, and you nearly always in those infections involving the ciliary body, you have the iris itself involved, especially in those infections that are a form of inflammation due to a toxemia, and you have the deeper membrane itself involved in so many instances. Now, if I am not correct in the way the inflammation travels to the external eye through the lymphatics and by metastasis, and

through the circulation, the whole theory of infection is absolutely wrong, because the best and latest authorities in regard to these infections have certainly stated positively that infections can travel upward through the lymphatics. Now that does sound peculiar, but I want to say this, that I saw a patient last week that was referred to me by Dr. W. S. Alexander of Ridgely. This man was just getting up from pneumonia and he had a typical papillitis—that would be about the best definition of it; and also the papillitis is nearly always due to a toxemia. So many children that you see going to school and are troubled with photophobia, you will find nearly every one of them has diseased tonsils and adenoids; lots of times you will examine these children and they will not have any astigmatism, and you will place then a plus of minuiens before the eye, which will give them temporary relief, and let them wear it. The only thing that it does is to protect the eye from the light; but at the same time you have a neuritis that is due to a toxemia. If the infections do not involve the external structure of the eye, the text-books are certainly wrong, or the pathologists' findings. If you will look into the pathology of the thing you will find where they are. You will not find in the text-books on the eye the pathology that is described in my paper, but you can find it in some of the latest text-books on pathology. This is not a new theory, and I am reporting my own observations, packed by a pathologist. I do not claim to be original at all, but I am sure if you will look in Brook's Pathology you will find it will absolutely back me up regarding the pathological conditions of the eye as I have stated. If any man wants to see some cases of chorioiditis that I have now under personal observation, I have them to show. I have one young man about eighteen years of age, a bookkeeper, who had chorioiditis; the inflammatory symptoms have practically subsided, his vision is nearly normal, but still there is enough pathology now to see it. Not one drop of medicine has that young man had; the only thing in the world he had was an enucleation of the tonsil. It is not those who have an acute condition of the tonsils at all; it is the old, degenerated tonsil, you might say, one that is unusually white, and if you will get into it you can squeeze pus out of it; it has not enough resistance itself to make use of the blood supply and the blood supply is not sufficient to produce a really active inflammation from these old infections, and you rarely ever have an acute condition of that tonsil at all. Those have been my personal observations. And this young man that I operated on was a bookkeeper; he never complained of tonsilitis; he said he used to have attacks of tonsilitis up to about three or four years ago, but since that time he has not had any tonsilitis. I have not

given him a drop of medicine, but he has been able to go on with his work ever since, and the only treatment that has been given to him is the removal of those tonsils. I worked a week trying to make a diagnosis, and finally found out this trouble was due to diseased tonsils, but couldn't find anything else to account for his infection. I do not depend on the history of other infections. I try to find them myself and make a diagnosis and you can only prove it by association with a pathologist. I never expect to report anything here offhanded in the society without being able to back it up positively.

GASTRIC ULCER AND ITS DIFFERENTIATION.*

By John A. Witherspoon, M. D.,
Nashville.

At the request of your president I will try to give you the results of years of experience and observation in the differentiation of gastric ulcer from kindred lesions, including not only intra-, but extra-gastric diseases simulating ulcer. Whether we regard ulcer as being caused according to the embolic or thrombotic theory of Virchow, or as indicated by the more modern bacterial findings of Rosenow will not be discussed in this paper: neither will I enter into the pathology of ulcer, only referring to the location when necessary to better describe symptoms influenced by location.

In the beginning I wish to emphasize the great importance of time and thoroughness and of utilizing every available means to avoid error in diagnosis. In the first place, it is imperative and necessary that the examiner shall know the normal before he can appreciate the abnormal. This includes the normal outlines of the stomach, its muscular activities as an aid to digestion and emptying its contents at the proper time, the digestive as well as the absorptive power taking place within the physiological limits of digestion. The pyloric opening is midway between the tip of the ensiform cartilage and the curvature of the 8th rib on the right side, slightly behind the left lobe of the liver with its lesser curvature, slightly concave, passing upward to the left to the 6th rib at its cartilagenous junction, under

*Read at annual meeting of Tennessee State Medical Association, Nashville, April, 1917.

which is the cardiac opening, passing upward and to the left to the 5th interspace near the left nipple line and passing convexly downward an half inch beyond the left nipple line; passing out from underneath the ribs at the 10th rib, crossing with its greater curvature from one and one-half to two inches above the umbilicus to the pylorus. While these outlines vary, yet they are sufficiently accurate for practical work in the normal empty stomach. A great deal has been said about the general practitioner being unable to use laboratory methods where access to a laboratory is not to be had. While this is true in the refinements of laboratory methods, especially in quantitative results yet, for a working basis, any doctor can use simple, qualitative tests in his office. The differentiation of intra- from those extra-gastric ulcers simulating closely the real gastric pathology will be considered briefly because of the frequent mistakes made in diagnosis. Gastric and duodenal ulcers are frequently preceded by a history of chronic gastritis and may be associated with the hypertrophic type with hypersecretion and hyperchlorhydria, but not always.

In dealing with the subject matter of the paper I will first give the cardinal symptoms of ulcer and the methods used in diagnosing this lesion in the order of their importance. Gastric ulcer may occur at any point in the gastric mucosa, but is most frequently found near the pylorus on the posterior wall and lesser curvature of the stomach, whereas duodenal ulcer, as a rule, is located one to one or one-half inches from the pylorus on the anterior wall of the gut.

In all diagnosis nothing is more important than a well taken history. This is especially true in ulcer. The usual history is of digestive disorders of an intermittent character, in which there will be periods of distress and pain after eating, with fulness and gas associated with all kinds of symptoms, varying in each case and followed by intervals of apparent perfect health—except constipation, which condition is often more or less permanent—together with nervous and irregular cardiac disturbances. These exacerbations are very common in the early spring and fall and follow some indiscretion in diet or prolonged overwork, either mental or physical. Ulcer often

occurs in subjects who have pyorrhea in which the alveolar pockets contain pus of the streptococcus viridus type. As a rule it is very noticeable that gastric ulcer occurs in those who have infected mouths and the exacerbations are associated with trouble with the teeth.

Second. Pain of a dull, boring or burning character, developing in from 1-2 hour to 1 1-2 hours after meals, varying in severity and often associated with a burning sensation from the gastric region to the throat along the oesophagus is often noted. This pain is influenced by the type of food, being exaggerated by solids or acids and modified by liquids, situated in the epigastrium near the tip of ensiform, according to the location of the ulcer, and reflected to the 10th rib in left sub-scapular region. The pain of gastric ulcer is relieved by vomiting or alkalis.

Third. In the vast majority of ulcer cases we have a high acidity with increase in the hydrochloric acid and while this is subject to exceptions they are not of such frequency as to change the rule. In the majority of cases there is also hypersecretion with large amounts of mucus.

Fourth. Vomiting is also a common symptom occurring during the pain and will relieve the pain in 85 per cent. of the cases. The vomitus contains undigested food of high acidity and, as a rule, occult blood. In my experience about 25 per cent of the cases of gastric ulcer developed free hemorrhage with symptoms according to its severity. I would state, however, that of many cases of free hemorrhage vomited in the majority it will be due to a ruptured varicose vessel associated with cirrhosis of the liver. This should be borne in mind in all hematemeses.

Fifth. One of the most constant and valuable signs of ulcer is the presence of a tender spot on palpation, situated about one inch below the tip of ensiform and slightly to the right of the median line. Of course, this point of tenderness will be more exquisite if the ulcer is on the anterior surface of the stomach.

Sixth. Pylorospasm is also a frequent symptom of ulcer and is produced by its close proximity to the pylorus, but it may be produced by reflex action and is then of nervous origin. It always interferes with proper emptying of the stomach and the symptoms of

obstruction develop either of temporary or permanent character. This obstruction may be temporary from reflex contraction, or mechanical and more or less permanent from the cicatrix of a healed ulcer. We must not forget that the pyloric end is the acid secreting, and the fundus the pepsin forming part of the stomach and this accounts for many of the symptoms above stated. It is well to remember that the relative occurrence is about four to one in favor of duodenal ulcers. Pylorospasm, if of neurotic origin, will be relieved by quiet or bromides and belladonna, but if due to ulcer on either side or within the pylorus or from the cicatrix of healed ulcer, will be followed by dilatation of the stomach, vomiting and the other symptoms of mechanical obstruction.

According to the Mayo statistics, 71 per cent occur in males, and 29 per cent. in females. In the differentiation these facts should be borne in mind. No one thing has added as much confirmatory evidence in the diagnosis of all gastric lesions as the X-ray. To get the best results from this source is to prepare the patient by giving a dose of oil the evening before and after a meal of two ounces of subcarbonate of bismuth or barium, the first plate is made the next morning, the patient coming without breakfast. The second plate should be made in six hours to show the retention, if it exists, and in 24 hours a plate should be made to show the passage of the meal through the bowel.

In late years a great deal has been said pro and con about the value of the test meal. I would only say in passing that properly done, it is of great value.

Many surgeons insist that the differentiation of gastric and duodenal ulcer is impossible and unnecessary. To this, I would say, that it is not only necessary, but in typical cases, easy. The very fact that cancer follows gastric ulcer and never duodenal is sufficient reason, but when one considers that the proper medical treatment gives so much better results in gastric ulcer and that the majority of duodenal ulcers require surgery, the necessity of differentiation is clearly shown.

While the histories in gastric and duodenal ulcers are very similar, especially in the inter-

mittent character, yet a careful study will develop points of difference of great value. The principal points of differentiation are:

First. Pain—While of much the same type—boring and burning, more or less severe, in gastric ulcer it occurs within from one-half to one and one-half hours after a meal, and in duodenal ulcer from three to four hours after a meal. In the gastric the pain is relieved by vomiting and alkalies; in the duodenal by taking food. The pain in gastric is reflected to the 10th. rib in the back and in subscapular region, while in duodenal it is reflected nearer the spine at the attachment of the 10th or 11th rib to the left or in the midscapular region and is of the hunger type, often occurring late at night or after the fatigue of the day before supper. The gastric ulcer has a point of tenderness near the tip of the ensiform; the duodenal, two inches above the umbilicus and one-half inch to the right of median line and is more exquisite than in the gastric unless the gastric ulcer is on the anterior wall. It is but fair to state that pain in some gastric ulcers is relieved temporarily by food, but it is always either hot or liquids and only temporary unless vomiting occurs or alkalies are given; and occasionally alkalies will relieve pain in the duodenal, but so rarely that it does not affect the rule. Hemorrhage in amounts recognized by patients only occur in 25 per cent of the cases and may, when large, be vomited and passed by stools in both, yet in the experience of the writer, occult blood is common in the stomach contents of gastric ulcer and rare in stools; while occult blood is rare in stomach contents and common in the stools of duodenal ulcer. While I know this finding is minimized by some examiners I consider it of great value if constant hyperchlorhydria is the rule in both but is greater and more constant in gastric ulcer; while hypersecretion and hypermotility are greater in duodenal ulcer, except in cases of ulcer close to the pylorus or where sufficient cicatrix exists in the gastric to produce partial obstruction. The gastric ulcer cases lose more flesh, due to the fear of eating from the pain it produces. The deformities of the stomach are so frequent in gastric ulcer and interfere with the function or processes of digestion to such an extent that they not only lose weight, but even after healing of the ulcer, may con-

tinue to pervert or disturb digestion, making gastric ulcer a more serious lesion than duodenal.

X-Ray Differentiation—The niche is possibly the most constant X-ray finding in gastric ulcer and is a bud-like formation or projection at the point of the ulcer in a stomach well filled with bismuth. The next important sign, the incisura, is an indentation of the gastric wall opposite an ulcer, the majority being located on the great curvature. True incisura should be observed while the stomach is filling and must be constant and stationery and manipulation should not reverse it. Atropine is also used to determine its permanency. This, with a six-hour retention with about an eighth of the meal taken, is very suggestive of gastric ulcer. There is a lessening of the motility in gastric ulcer, usually the wave of contraction stopping at the ulcer and the incisura may be so marked as to produce an hour glass stomach.

To summarize, the niche with an accessory pocket is the most valuable sign. Next, the incisura, sometimes the hour-glass stomach and the six hour retention are the valuable X-ray signs of gastric ulcer in contradistinction to duodenal.

In the diagnosis of duodenal ulcers may be noted: First, the deformity of the bulb and imperfect Bishop's caps. Second, the hypermotility or increased peristalsis waves. Third, in the serial method of examination the deformities are of various types; first, the general distortion and sharply outlined projections and incisura indentations giving the caps the resemblance of a pine tree top or coral-like formations. This sort of bulb, according to Carman, is always a duodenal ulcer. Fourth, hypertonus, hypermotility and hyperperistalsis all exist in duodenal ulcer. Fifth, rapid emptying of stomach is not infrequent in duodenal ulcer. Sixth, if in addition to gastric retention there is typical gastric hyperistalsis it is practically certain that there is a duodenal ulcer.

It is very important that gastric cancer be early recognized and no more difficult diagnosis exists than its early recognition, especially when it develops from gastric ulcer. Here the history is that of ulcer, but in my experience, where an interval of years has existed of comparative health following an ulcer history and then suddenly return in symptoms after

ten or twelve years in one of over 45 years of age, it is the rule that the trouble is malignant. In the study of these cases, of course, the age and previous gastric history is of great value. The pain, while influenced by a meal and coming within two hours, is intermittent and relieved by vomiting or alkalies in ulcer. This is not the rule in cancer, in which the pain is more or less constant, of a sharper type, worse at night and, while vomiting may alleviate it in a few cases, it will not wait to reappear with a meal in cancer. Second, vomiting is more constant in cancer and shows more retained food, usually, than ulcer and only relieves temporarily. Third, while the rule of increased hydrochloric acid in ulcer and its absence in cancer—lactic acid taking its place—is an old one and valuable, still we must not forget that there are a great many exceptions to it; but a careful and repeated analysis of stomach contents will prove its correctness in ulcer and, where hydrochloric acid exists in cancer, repeated tests will show the gradual lessening of hydrochloric acid and the appearance of lactic. The Opler Boas bacillus, being only significant of gastric ptosis, is far more common in cancer. Fourth, the point of tenderness in ulcer, while marked, very rarely exists in any exquisite degree in cancer, but careful palpation will early demonstrate a movable mass near or at the pylorus, especially on respiratory efforts, in cancer; but where even an induration exists in the cicatrix of an ulcer, it is more tender and not so movable. Glandular enlargement is, of course, suggestive and a node near the umbilicus diagnostic almost of cancer. A rapid, downward course, together with cachexia and a palpable mass is diagnostic of cancer, but too late to promise much in a surgical way. The presence of hemorrhage is, of course, very different and while the coffee ground type in cancer is a late manifestation, the occult blood of ulcer and the microscopic tissue in some cancers is very diagnostic.

The X-ray has proven of great value in all of these intra-gastric and duodenal lesions and considered with the general symptoms and physical signs will confirm the diagnosis in the majority of cases. The findings in cancer, while depending upon the location, are as follows in pyloric cancer, the usual location.

First. Filling defects producing irregular contour, often with narrowing of lumen near the pylorus, sometimes a mere white line showing through the pylorus, as in several cases we have had recently.

Second. Absent or retarded peristalsis near the suspected area—is very diagnostic.

Third. In a few cases the pylorus may be gaping and empty very rapidly but by far more frequently obstruction is the rule and retained food contents will be found with gastric dilation hours after emptying time. This gaping, when it exists, is due to interference with the sphincter contraction.

Fourth. Retarded or reversed peristalsis may occur in cancer with a large six hour retention showing marked lessening of motility.

In differentiating extra-gastric lesions the X-ray is especially valuable and, except in perigastric adhesions, very suggestive of a correct diagnosis. Pylorospasm, a frequent symptom in gastric diseases, may be entirely of nervous origin through the autonomic nervous system or by overaction of the vagus, but ulcer on either side of pylorus or carcinoma is the common cause. However, disease of the gall-bladder may cause it. The differentiation of a mechanical obstruction due to the cicatrix of an ulcer, or the mass of a cancer, is quite different from the pylorospasm of nervous origin occurring, as it usually does, in a neurasthenic. An antispasmodic, as bromide with belladonna, will relieve ordinarily whereas the stomach in the obstructive type takes no more or less permanent dilatation and retains food-stuffs, as raisins, for hours. This differentiation is best made with the Einhorn string test in which a duodenal bucket attached to a silk or linen string is swallowed. This is made easier by placing the bucket in a capsule and retained for twelve hours. If the pylorus is open it will contain duodenal secretion and the string be bile stained, often with a golden yellow. In mechanical obstruction the bucket never enters the duodenum.

The cases of so-called nervous dyspeptics, which may simulate real gastric pathology, especially ulcer, I was able to prove many years ago, were very commonly associated with eye strain or utero-ovarian troubles in the female. The hyperchlorhydria is common to both, yet it is very variable in **neurotics in quantity and**

under perfect quiet often absent (heterochylia). The pain is paroxysmal of severe neuralgic type and if transmitted either to the precardiac or around the waist line is relieved by pressure or taking hot foods and associated with hysterical belching produced by drawing air into the stomach and eructating by noisy belching. Hypermotility or very active peristalsis is a very common and important symptom of gastric neurosis, it being impossible to get a test meal if you wait the usual hour. The symptoms given, when occurring in a neurasthenic or neurotic subject, are very diagnostic of the extragastric lesions.

Gall-bladder disease, with or without adhesion, may simulate ulcer, but if one will study the history carefully the conditions are capable of differentiation, even where gall-stone colic occurs. Colicky pains, as a rule, are extra-gastric. It is remarkable how many gall-bladder cases will give a previous history of typhoid and occasional jaundice. In these cases hypersecretion and hyperacidity is the rule, associated with great gas accumulations, but the hyperchlorhydria is unstable in gall-bladder disease and no occult blood is found in stomach contents. While vomiting is common in gall-bladder disease it does not relieve the pain as in ulcer, nor do alkalies affect the pain of gall-bladder affections. The pain which in gall-stones is sudden and stabbing is very different from ulcer. In the infections of the gall-bladder without gall-stone colic, in addition to the similar symptoms, a tender gall-bladder, together with an increased leucocyte count is diagnostic and when the constitutional symptoms of rigors, fevers and sweats often seen are added the diagnostic differentiation is complete. This includes the evidences of severe pain such as cold, clammy skin and sweating with more or less shock. When this pain is reflected to the right side the picture is complete and quite sufficient for a clear-cut diagnosis of gall-bladder disease, which remains tender for days after the attack.

Acute appendicitis not infrequently has epigastric pain, but the history of attack is different and the point of tenderness, as stated near the tip of ensiform in ulcer, is at McBurney's point in appendicitis with marked **right rectus rigidity below the umbilical line.**

There is a usual rise of temperature, full bounding pulse and the general appearance of acute illness of more or less severity in acute appendicitis not seen in ulcer and should enable us to make a correct diagnosis, except in a perforating ulcer. In chronic appendicitis more trouble exists in making a diagnosis, but here, as in all of these intra-abdominal troubles, we must study each case upon its merit and correlate each symptom according to its value. Constipation, common to both, is, in my opinion, responsible for many symptoms in common, but the difference in gastric findings, the character of pain and its transmission in each, and the location of the tender spot and the location of rigidity are quite sufficient to prevent error.

In the perforation of a gastric ulcer there is a sharp, sudden pain followed by faintness, nausea and vomiting, marked shock and great epigastric rigidity, which rapidly extends over the abdomen, in contradistinction to right rectus rigidity. There is, however, where no hemorrhage occurs in perforation a period of improvement, which is very deceptive and which has cost many lives. This I have seen in many cases. If rigidity remain, operate.

Floating kidney with attacks of Dietl's crisis should be easily diagnosed from ulcer if one remembers the dragging, colicky pain with a tender, loose kidney, followed by the passage of large quantities of pale, low specific gravity urine. Occasionally a renal calculus embedded on the lower lobe of the right kidney or in the pelvis of the kidney produces a pain in the epigastrium, but in the majority of cases, the pain is reflected downward to the groin. The urine is the best criterion and will show blood—often pus—and kidney epithelium.

The gastric crisis of locomotor ataxia will, at times, simulate ulcer and confuse the diagnosis, especially when a gastric history exists, but if one will remember that at the ulcer age this disease follows syphilis, has lightning pains in the legs, Argyle-Robinson pupil, loss of patella reflex and an ataxic gait which is pathognomic of locomotor ataxia.

In conclusion permit me to say that careful and correct diagnosis can only be made in this type of cases where the examiner takes time, examines his case in the early morning before breakfast, examines the night's and morning's

urine, correlates all of the various findings and by exclusion forms his opinion without bias. He will, except in a few border line cases, be able to accurately determine the true lesion.

DISCUSSION.

DR. W. S. LAWRENCE, Memphis: What I shall have to say in connection with this paper will relate to the X-ray as a means of diagnosis.

In the past 12 years I have made somewhere in the neighborhood of 2,5000 X-ray examinations, a great many of them were gastro-intestinal cases, and I want to say a few words on what the X-ray can do and cannot do in these cases. Medical men generally seem to be divided rather distinctly into two classes of belief on this subject. One class believes that the X-ray can make a diagnosis of gastric and duodenal ulcer absolutely without error, and can do it easily, and the other class believes it cannot be done at all. Neither one is correct. The X-ray has a great deal to offer as an aid to diagnosis in these cases. What it has to offer is not offered with ease. It is difficult work to do. There is more apt to be misinterpretation and wrong information given out by the X-ray in gastrointestinal cases than any other class we examine.

There are two schools of belief among X-ray men as to methods of diagnosis of gastric and particularly of duodenal ulcer. The older school was led by Barclay, of Oxford, England, and followed for a long time by Carman, of the Mayo Clinic, who banked a great deal upon what Dr. Witherspoon mentioned as six hours retention, as used in connection with the X-ray diagnosis of stomach ulcer. If the stomach emptied itself rapidly, it showed irritation of the ulcer probably. If you take a plate, as suggested by the essayist, six hours after eating, if there was gastric retention, ulcer was certain or very nearly so. If the stomach emptied itself very rapidly but not completely in six hours, then there was gastric ulcer. Those are indications of gastric ulcer or are hints toward the presence of duodenal ulcer, but by no means positive proof of it. The other school was led by Cole, of New York. Cole has contended for years that he could make a diagnosis of ulcer of the cap, and some of the most enthusiastic and most virulent discussions we have had in the American Roentgen Ray Society have been led by Cole on the subject of diagnosis of ulcer of the cap. Cole maintains that he can diagnose ulcer of the caput duodena, the first part of the duodenum, by the X-ray, and can do it in almost every case, and is closely followed in that belief by George and Leonard of Boston, who have written an exhaustive work on the subject. Cole's method is to give a barium meal and then begin making X-ray plates. There is a normal aspect of the stomach and duodenal cap, particularly the duode-

nal cap. The stomach may vary in size and position, but the normal duodenum comes out on the X-ray plate triangular in shape. The base of the triangle is the pylorus. The pylorus you can see in normal cases because of the little opening about the size of an indelible lead pencil or larger than that, then a sharp line, the base of the triangle, and two legs of the triangle coming up in this way (illustrating). That is the normal triangle. When you can bring that our normally at that point there is no ulcer. Ulcer of the caput duodemae produces deformity of that shape. If you get such deformity on the plate it is suggestive of duodenal ulcer. Make another plate soon after, and if you get the same thing, it is more suggestive. Make another plate and still another, or even a dozen of them in 15 minutes. If three, four or five of these plates come out nearly the same, showing a deformed shape of the cap, the inference is pretty nearly a hundred to one that you are dealing with duodenal ulcer. This is the direct method of Cole in diagnosing ulcer of the caput duodenaee. That work is difficult, but its findings are exact. It can be done by those who have the best and most elaborate equipment, but it presupposes a great deal of work and expense.

As to cancer of the stomach, the findings are more easy and definite. With the X-ray you can in every case make a diagnosis of cancer of the stomach, if at all advanced, because there you will get a filling defect. You have a growth in some part of the stomach which projects into the stomach, and wherever a growth of soft tissues goes, barium and bismuth cannot go, and you will get a filling defect, a projection into the lumen of the stomach. If this occurs near the pylorus and you will get that part of the stomach distorted in shape. In some cases there appears to be a streak of barium making its way through an irregular channel. Such a plate is positively iagnostic of cancer of the stomach and there is no guesswork about it.

DR. E. M. HOLDER, Memphis: I have listened with a great deal of pleasure to Dr. Witherspoon's paper and endeavored to pick a flaw in it as he went along, which weak place I might attack in a friendly way, but I did not find any such point of attack.

As an internist he has evidently given a great deal of study to this line of work. The surgeon is dependent upon the internist and X-ray man for a diagnosis in these cases. I cannot forget the case that the late lamented John B. Murphy had in one of his clinics. The patient, a man, a splendid athletic specimen, 35 years of age, well nourished, and weighing 260 pounds. Dr. Murphy said in his clinical talk before the operation that this man had been coming to his office for weeks and weeks and that he had been unable to make a diagnosis. Finally, he said to him, perhaps I had best do an

exploratory operation. The patient gave his consent. Dr. Murphy opened the abdomen, looked in, felt the stomach, and closed the incision without doing anything. He turned and said to the bystanders, "This case is inoperable."

Here was a splendidly nourished physical specimen of manhood who had been under Dr. Murphy's observation for weeks and months and he could not make a diagnosis of cancer of the stomach. That is why it is so discouraging. The stomach contents, the test meal, the bismuth picture the internist finds, all seem to fail occasionally, and so often in fact that it is discouraging both to the profession and to the laity. We do not know any more about this disturber of the abdominal peace now than we did many years back as far as early diagnosis goes. It is true we now have the advantage of the X-ray, which has come to our aid in recent years. We also have the advantage of the knowledge of such men as Dr. Witherspoon, and still we overlook cancer until it gets beyond the control of the surgeon. There is yet something to do, and that is why I am interested in Dr. Witherspoon's paper. It has been said that 30 per cent of all patients who die of stomach trouble, die of cancer of the stomach. Think of the enormous number of deaths from cancer of the stomach. The symptoms are so obscure, so misleading that test meal findings are unreliable. X-ray plates are helpful but not pathogomonic. The findings of the internists help us materially, and I have never yet read or listened to a paper that gave me more completely the differentiation between cancer, ulcer, gall bladder and appendiceal attacks than the one which we have just heard; yet we cannot all be internists like Dr. Witherspoon, nor X-ray specialists like Dr. Lawrence. Altogether we do not seem to make the diagnosis early enough in these cases to accomplish the end that we desire. It is discouraging to say the least. If we cannot make a diagnosis, surely we can recommend an exploratory operation early. We can say to the patient that this exploratory operation is practically free from danger—that if it be a cancer we can probably control the situation, but if we wait until it is a clinical certainty that it is cancer, we cannot. Notwithstanding the teamwork in the best organized clinics in this country and in Europe, 20 per cent of mistakes are made in diagnosis. I believe it is openly admitted that only 80 per cent of correct diagnosis are made even in teamwork, with efficient laboratory aid, X-ray work, and the work of the internist. If, with abdominal work, only 80 per cent. of correct diagnoses are made, this, too, is discouraging. Imperfection in our work must surely begin soon to open our eyes and encourage us to try to remedy this defect. We are told that nearly all gastric cancers follow gastric ulcers. It is also believed that very few duodenal ulcers are followed by cancer. I believe Dr. Witherspoon brought out that

point in his paper. If gastric ulcers are followed by cancer, it is very important for the surgeon to know it.

Why do they occur less often on the lesser curvature? The stomach usually contains a quantity of ingested food, which from gravity, covers and protects the greater curvature; therefore, when one drinks hot water or takes hot food or iced water it may be that these hot or cold foods coming in direct contact with the lesser curvature, act as an irritant, and account, in these civilized days, for the producing of cancer in this portion of the stomach.

Formerly, cancers of the stomach were not nearly so frequently met with in the early days of medicine and in the history of the human race. We believe that cancer of the stomach is on the increase. I do not think we are diagnosing more cases of the disease than formerly, although this may be the fact. That is what Kehr said when asked for a reason why we are having apparently so many more cases of gall bladder now than formerly. His reply was we are not having any more of these cases now than formerly, but our confreres are able to diagnose them and they appreciate the dangers of the disease, and we therefore are getting better clinical findings, and the disease, while apparently on the increase, is not so in reality.

The point I have to make, and the only thing worth while perhaps, because I did not find anything to criticise adversely after hearing this paper, is that when a patient has an ulcer on the anterior wall of the stomach, when the patient lies in the recumbent position the pain ceases. The explanation for this is when the wall of the stomach is not bathed with acid secretions the pain subsides. In the recumbent position it is not touched by the fluid of the stomach. If the same patient gets up he has pain. If a patient has an ulcer on the posterior wall, he will have pain not only anteriorly, but in the back, caused probably by some induration or involvement of the pancreas.

Those are the only two points I can add to the splendid paper of Dr. Witherspoon.

DR. HOWARD KING, Nashville: Like Dr. Lawrence, I have enjoyed very much the clear differentiation Dr. Witherspoon gave in reference to gastric ulcer as well as cancer. I wish to speak on the X-ray side of this subject and to add a little to the discussion which Dr. Lawrence gave so well. He referred to certain schools in this country, concerning one of which Cole is the leader; in other words, serial plate diagnosis. A few years ago, when I began the X-ray examination of the stomach, I did so with a great deal of doubt. I belonged to the school that believed the X-ray could not make a differential diagnosis of gastric ulcer; but with the many improvements in apparatus, and with the improvements that different men have

brought out, I have learned to know that we are not only able to diagnose the majority of these cases, but we are going to diagnose more and more of them as we make more improvements.

There is another school that adheres to the fluoroscopic examination of the stomach and depends almost entirely upon the visualizing of this organ under the fluoroscope in its motile state. This school might be said to have been led by Case, of Battle Creek, Michigan, and Case, as we all know, is one of the best X-ray men in the world. Case, however, does not adhere entirely or depend entirely upon the fluoroscope. Certainly, we know that the stomach and intestines being motile organs, should be studied while moving and should be visualized with the fluoroscope to gain all the knowledge we can gain of that organ in its motile state. That, I believe, is of great value, but I believe the best X-ray men today are coming to a combination of the two schools and are depending upon fluoroscopic examination of the patient and to some extent upon serial plate diagnosis combined with it. To say the least, some plates are being made, but not as many as Cole makes.

Dr. Witherspoon referred to the differentiation of gastric ulcer and cancer and mentioned the importance of a crater. I am afraid Dr. Lawrence, not having finished his discussion, may have conveyed the idea that the X-ray diagnosis was to a large extent more uncertain than it really is. Case and many other leading men comment upon the X-ray examination of gastric conditions, especially gastric ulcer, and conclude that many cases that were clinically typical from a thorough examination were found from the X-ray standpoint to be absolutely normal. Some of these cases going on to surgery were proven to be normal—in fact, the majority of them. On the other hand, there are a few cases that have gone on to operation which, from the standpoint of the X-ray, were normal but were proven to have serious lesions. They are fewer in number, however, than the ones that get by on the other side. To those who stay in the dark room and look at the stomach in the fluoroscope and study the plates of the stomach, a revelation has occurred not only as to the position of the stomach, but as to its movements, its emptying time and many other features. Case has given us a good outline to follow. It is something like this: first, the filling defects Dr. Lawrence referred to. Hypermotility is emphasized in connection with the incisura. Pressure pain points are referred to by Case. These pressure pain points can be observed under the fluoroscope, noting where you find the pain. Then organic deformities are considered, also flecks or other indentures or other filling defects. Taking all these things together, it strikes me that just as you make a diagnosis from an examination of any other patient, so you must take these things altogether and correlate them, and the X-ray man in so doing does not depend

upon any one point, but after a correlation of all he has found with the fluoroscope, and then he can make a diagnosis with a marked degree of accuracy.

Many men in this day and time are finding quite a large percentage of gall-stones. When it was first published, Case found 40 per cent; I could not believe it at first, but when I was with him a while and saw him find them, I believed more and more he was finding that large percentage of gall-stones. Some men claim to find them in 60 per cent. of the cases. To say the least, a few years ago we hardly ever found one, and now we are finding them in something like from 25 to 40 per cent. of cases. I believe that apparatus is going to be so improved in the future that in a few years we will find a larger per cent of gall-stones than we do now, and naturally we will find other signs of diseases by which we can depend upon the X-ray examination to help us out. But it strikes me the X-ray man will sooner or later stop the division of schools and all will come to one universal school, and that is the school in which any good medical man will depend upon a correlation of all facts to draw a conclusion.

WORK WITH HOOVER AND SERVE OAT FOODS.

“Wheatless Meal” a Patriotic Duty—Oats High in Energy Value and Low in Price.

To sustain our allies and our own army abroad it is necessary for this country to ship to Europe 200,000,000 bushels of wheat the coming year, in place of a normal shipment of 80,000,000 bushels. That is why Herbert Hoover says we must eliminate waste of bread and must have one “wheatless meal” each day. It is impossible to view this matter as other than a patriotic duty. Yet the domestic housewife must look to the matter of serving nourishing meals.

An excellent food to consider as a flavory, nutritious, and easily prepared substitute for bread is oats, either in the form of oatmeal or oatmeal biscuits. As a food that imparts vim, energy, and endurance, oats have long been recognized as supreme. And in the form in which they can in these days be procured for table use, they excel nearly every other grain food in flavor and ease of preparation. Again, oats have advanced little in price, whereas nearly all other foods have

soared. Prices on Quaker Oats—the product of the Quaker Oats Company of Chicago—for example, have advanced, on the smaller package, only from 10 cents to 12 cents, and on the large, only from 25 cents to 30 cents. Most other goods, for the same nutrition, cost from twice to ten times as much. Even so simple a diet as bread and milk, for the same nutrition, today costs twice as much as oatmeal. The average mixed diet costs four times as much. It has been estimated by food experts that oats, to the extent that they are used in place of other foods, on the table, represent a lower cost by 75 per cent, on the average, than what they take the place of.

A few specific comparisons may be interesting to the reader: Per unit of nutrition, bacon and eggs cost five times as much as oatmeal, steak and potatoes cost five times as much, chicken costs six times as much, the average mixed diet four times as much. In view of the critical food situation and the comparatively low cost of this superior food, the housewife, it appears, would do well to serve oats more often.

AT CAMP GREENLEAF.

The following named Tennessee doctors have been ordered to Camp Greenleaf, the training camp for Medical Officers' Reserve Corps, at Fort Oglethorpe. None of these names have appeared in the Journal as having received orders and we are very desirous of having the name of every man who has enlisted in the Medical Service to appear in the Journal.

Major C. A. Snoddy, Knoxville; Capt. E. C. Mitchell, Memphis; Lieutenants: J. O. Boals, Somerville; F. M. Boyatt, Onieda; W. D. Cagle, Lobelville; D. B. Cliffe, Franklin; L. D'C. Cotten, Alexandria; A. N. Dykes, Johnson City; A. L. Glaze, Jr., ———; R. B. Griffin, Ridgley; F. Gruver, Nashville; J. H. Lassiter, Nashville; J. M. Oliver, Portland; J. G. Seay, Germantown; L. Schumaker, Chattanooga; L. L. Terry, ———; S. O. Turner, LaFollette; D. A. Walker, ———; D. B. Williams, Chattanooga; Harry E. Hall, Appison; W. C. Sain, Bolivar; G. C. Anderson, Eads; G. J. Walker, Gillises Mills; W. H. Ballard, Laconia; J. L. Smith, Selmer; C. D. Walton, Nashville; F. W. Lee, Springfield.

TENNESSEE IN THE MEDICAL RESERVE CORPS.

In the September Journal was printed a list of names of 244 Tennessee physicians recommended for commissions in the Medical Reserve Corps upto August 18. Below will be found a list of 52 names, including those of all Tennessee physicians recommended for commissions between August 18 and September 29. Thus it will be seen that 296 Tennessee doctors have been recommended for commissions. The Journal is informed that commissions have been forwarded to all who have been recommended and whose names appear on the list printed last month and the one below, but that some of these commissions have not been formally accepted.

Of the 296, there are 88 from Memphis, 61 from Nashville, 16 from Chattanooga, 11 from Knoxville, 7 from Jackson, 7 from Columbia. Considerably more than one-half of the entire number are from Memphis and Nashville, which two cities have made noble response to the call of the nation. Jackson and Columbia, the latter named a very small city when compared to others here named, have also made a fine record for patriotism among their medical men. It must be remembered, too, that a number of Memphis and Nashville doctors offered their services only to be rejected because of physical deficiencies. The state at large has not responded as have Memphis, Nashville, Jackson and Columbia. The call is still sounding. Tennessee's quota is not nearly complete, in which respect our state is far behind some other states.

When it comes to quality, Tennessee has given many who are as good as the best physicians in all the land and we believe the whole list will compare favorably with that of any other state.

Those who have gone have made the supreme sacrifice—each man has given himself and so has given all; the big man and the lesser man have put everything by to answer the call of his country. There are others who can go as well as they who have already gone. The call is still sounding. Let Tennessee do her full part!

Lawrence Johnson Lindsey, Covington..1st. Lieut.
 Ernest Virgle Edwards, Knoxville.....1st. Lieut.
 William Howard Delap, LaFollette.....1st. Lieut.

Kyle Cornett Copenhaver, Mascot.....1st. Lieut.
 Samuel Lee Edwards, Memphis.....1st. Lieut.
 Marcus Haase, Memphis.....Major
 Frank Ward Smythe, Memphis.....1st. Lieut.
 Benjamin Bernard Wright, Memphis....1st. Lieut.
 Grover Cleveland English, Mt. Pleasant..1st. Lieut.
 Aareiel Ellis Goodloe, Murfreesboro....1st. Lieut.
 Sampson Cunningham (colored), Nash-
 ville1st. Lieut.
 Jesse Jacob Frey, Nashville.....1st. Lieut.
 George Abram Hatcher, Nashville.....1st. Lieut.
 Phillip John Trentzsch, Rives.....1st. Lieut.
 Allen Lawrence Lear, Sewanee.....1st. Lieut.
 George Copper Lyons, Surgoinville....1st. Lieut.
 Edward Carter Matthews, Trenton.....1st. Lieut.
 Daniel Carr Haggard, Unionville.....1st. Lieut.
 Homer Clytus Wysong, Beech Grove....1st. Lieut.
 Jonathan Nathaniel Rucker, Gallatin....1st. Lieut.
 Adrian Delch Brooks, Jackson.....1st. Lieut.
 Thomas Patrick Haralson, Jr., Jackson..1st. Lieut.
 William Hupp Baldwin, Memphis.....Captain
 James Leslie Bryan, Nashville.....1st. Lieut.
 Joseph Perry Schell, Nashville.....1st. Lieut.
 Enoch Carruth Seale, Nashville.....1st. Lieut.
 Benjamin Franklin Loring, Union City..1st. Lieut.
 James Max Smyth, Camden.....1st. Lieut.
 Lloyd Stanley Nease, Del Rio.....1st. Lieut.
 Ira Jackson Tatum, Gleason.....1st. Lieut.
 James Henry McCall, Huntingdon.....Captain
 Edwin Wiley Reeves, Johnson City.....1st. Lieut.
 Thomas Ap Roger Jones, Knoxville.....Captain
 Beecher Lavator Ogle, Knoxville.....1st. Lieut.
 Lucius Kennedy Patterson, Knoxville..1st. Lieut.
 James Henry Presnell (colored), Knox-
 ville1st. Lieut.
 Robert Miller Young, Knoxville.....1st. Lieut.
 Hiram Adoniram Laws, Jr., Lynchburg.1st Lieut.
 John Hansell Herring, Memphis.....1st. Lieut.
 Waldo Briggs Lain, Memphis.....1st. Lieut.
 Burnice Earl Morgan, Memphis.....1st. Lieut.
 Grady Alexander Morgan, Memphis....1st. Lieut.
 Harry Marion Rambo, Memphis.....1st. Lieut.
 Vivien Peyton Randolph, Memphis.....1st. Lieut.
 Seymour Hopper Rowland, Memphis...1st. Lieut.
 Howard Lombard Walker, Memphis.....Captain
 Cecil Everett Wards, Memphis.....1st. Lieut.
 Grover Cleveland Webb, Memphis, Tenn.1st. Lieut.
 George Thomas Wilhelm, Memphis.....1st. Lieut.
 James Dunn Lester, Nashville.....1st. Lieut.
 Thomas William Menees, Nashville....1st. Lieut.

DR. W. M. WRIGHT.

Dr. W. M. Wright, an honored member of the Carroll County Medical Society and of the Tennessee State Medical Association, died at his home at Huntington on October 6, 1917, in his 80th year. Some account of Dr. Wright's life and work will appear in another number of the Journal.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn.

OCTOBER, 1917

EDITORIALS

THE MEDICAL BLACKLIST.

Dr. R. B. Kilpatrick, Gold Dust, Tennessee, has sent the Journal a communication describing the operations of a mutual protective plan which has been adopted by the profession in his county. Dr. Kilpatrick seems to think that the physicians in every county in the state can adopt this plan for protection from deadbeats with profit, financial and otherwise. The scheme embraces the publication of a "blacklist"—for use by members of the medical society—and demands from each co-operating physician a refusal to visit any member of a family whose head has given cause for having his name appear on the "blacklist." No name is to be intentionally allowed to get on this list whose possessor is unable to pay a doctor's bill which is justly due. Dr. Kilpatrick states that the results secured from the operations of the protective plan in his county have been splendid—in getting money due the doctors, in drawing the physicians into more friendly relations, in making for better medical organization from every standpoint. No doctor in the county who is not a member of the county society can secure the services of a consultant who is a member of the society.

There can be no question but that physicians are imposed upon by "deadbeats" and that they need protection from these parasites. It does seem that there should be some scheme of protection devised which could be successfully applied in every county. We believe that the plan described by Dr. Kilpatrick is working pretty well in his county, though it has not been long since we had a letter from one of his fellow-members who complained of the injustice of being com-

pelled to refuse to consult with a nearby physician. There are some difficulties about this protective business, however, which may operate to make any plan ineffective and which hold possibilities for making some of the plans which have been proposed altogether undesirable.

It is next to impossible, as our observations lead us to believe, to make all the doctors "stick." One breaks over, then another and then it's all up. This is the rock on which most of these schemes have broken to pieces.

There is the danger of committing a very grave injustice against an honest man by getting his name on the "blacklist." There are several angles to this proposition.

There is the danger, too, of forcing "undesirables" into the medical society. In some counties, as we are quite sure is the case in Dr. Kilpatrick's county, there are no "undesirables." In some medical societies, however, men would be received whose sole purpose and interest would be to use the society as a collecting agency.

We commend any plan which will work with full justice to all concerned. We advise extreme caution in the adoption of any protective scheme in any county where there are probabilities for harm to any honest man or where the cause of organized medicine might be made to suffer through the acquisition of selfish "dead timber."

REPORTED SINCE LAST ISSUE.

The following names of members have been reported for enrollment in the Tennessee State Medical Association since the list published in the September Journal was compiled:

Drs.: W. H. Tanksley, 155 8th Ave., N., Nashville; C. F. Thomason, Jackson Building, Nashville; J. H. Parker, 1201 Broadway, Nashville; V. H. Coles, 302 6th Ave., N., Nashville; A. T. Peay, 632½ Market St., Chattanooga; H. M. Barker, Flintstone, Ga.; Jos. W. Johnson, Volunteer State Bldg., Chattanooga; R. M. Colmore, Volunteer State Bldg., Chattanooga; J. E. Powers, Reagan; M. F. Walker, Santa Fe; H. O. Anderson, Williamsport; P. D. Biddle, Columbia; C. C. Marshall, Hornbeak; L. D. Nichols, R. 5, Hickman, Ky.;

Eugene Rosamond, Bank of Commerece Bldg., Memphis; G. B. Stewart, 338 Garland Place, Memphis; T. C. Graves, Court House, Memphis; A. G. Coleman, Goodwyn Inst., Memphis; H. P. Hyder, R. F. D. Elizabethton; C. L. Hays, Covington; C. E. Tubb, care Vassar Hospital, Poughkeepsie, N. Y.

There are now 1,557 names on the 1917 roll. One year ago on the same date we had 1,562. We should have more now. Let's get 'em!

DEATHS OF TWO CHATTANOOGA PHYSICIANS.

Dr. M. M. Wagner, Chattanooga, was drowned in the surf at Fort Henry on September 18. Dr. Wagner was at Fort Henry as Lieutenant, M. O. R. C., U. S. A., having been assigned to duty only a short time before his untimely death. Before locating at Chattanooga, Dr. Wagner was the physician at the "Lock and Dam," a great engineering project on the Tennessee river near Chattanooga.

Dr. R. M. Richardson, a young physician who enjoyed the respect and good will of all who knew him, died at his home in Chattanooga on September 18, his death having been due to tuberculosis.

The Chattanooga Academy of Medicine and Hamilton County Medical Society held a memorial meeting on the evening of September 21 in memory of these two members.

GONE TO WAR.

Some two hundred or more of the members of the Tennessee State Medical Association have been or will be called into the Army or Navy Medical Service. This means that our membership will suffer a loss of about one-eighth of its total unless some steps be taken to retain the names of these two hundred members on the roll. The Association cannot afford any such loss of members; those who give themselves to the service of their country should have their membership in the Association insured.

Let every county society pay the membership dues of its members who have gone to war when dues become payable on January 1, 1918.

YOUR PAPER, PLEASE!

Several of the scientific papers read at the April meeting at Nashville have never been put into the hands of the Secretary. These are the property of the Association, should be published as part of the transactions, and are needed to make the Journal.

Your paper, please! And at once!

FOR SALE.

My property at Friendsville, Tenn., consisting of six-room house, barn, office and store house, on corner of lot, all in good condition. The practice will be free. For a man who wants to work this is the place. Will give possession any time. As good farming country as can be found in the state. Situated on L. & N. R. R., 21 miles south of Knoxville. Reason for selling, bad health. For particulars call or write

N. C. ELLIS, M.D.

Lock Box N. Friendsville, Tenn.

THE SOUTHERN AT MEMPHIS.

The greatest medical meeting ever held in the South, and one of the best ever held anywhere, was at Atlanta last year when eighteen hundred doctors of some sixteen states came together for the tenth annual meeting of the Southern Medical Association. The eleventh annual gathering of the members of this virile organization will be at our own proud city of Memphis on November 12-13-14-15, just one month off. The Atlanta meeting was the greatest ever, the Memphis meeting is going to be still greater. Every doctor in Tennessee should consider it a part of his duty to help make it so.

The program in every section, we are told, is full of good things from good men. In addition to the usual scientific addresses there are to be patriotic addresses from some of the nation's greatest orators. And the whole crowd is going to sing! Tune up your vocal chords and go down to Memphis prepared to join in the great chorus composed of loyal Americans, who are going to sing the songs of a patriotic South and a patriotic Nation as they were never sung before.

British and French army surgeons will be there and will contribute to the program, pre-

senting accounts of the wonders of war surgery and medicine as developed during these last four years. And we hope, though the official announcement is silent as to this, that our good United States Army is going to be represented, too.

There's going to be a Malaria Conference on the 12th, the Southern States Association of Railway Surgeons will meet on that day, too, and alumni reunions galore will be a leading feature.

Memphis is going to take fine care of the meeting—that's the Memphis way of doing. Let's all go and help make the meeting the very best on record—for our own sake, for the sake of the Southern Medical Association, and for Memphis and the Memphis doctors, some two hundred and twenty-odd of whom are members of our own State Association.

A CINCINNATI "INSTITUTE."

There is an "institute" in Cincinnati against which institution some very drastic measures should be quickly instituted. If we belonged to the I. W. W., we would suggest hanging for the "director" and about nine full-grown sticks of dynamite judiciously placed and enthusiastically exploded for the "institute." And we wish, for the moment, that we were in the dynamite gang.

The "R. van Walden Institute" is the one of which we speak and here is why we speak.

W. S. FARMER
Superintendent

CENTRAL HOSPITAL FOR THE INSANE
Nashville, Tenn.

Sept. 26, 1917.

Dr. Olin West,
Nashville, Tenn.

My dear Doctor:

Following is a brief history of Dr. Roon Walden of R. Van Walden Institute, 67-68-69 Mitchell Bldg., Cincinnati, O., who advertises all over the country to cure "increased blood pressure," including arteriosclerosis, and heart disease in general.

I had a brother-in-law, J. W. Kerr, 919 Fatherland Street, Nashville, who had had organic heart disease for a number of years, whose physician in the city was Dr. O. N. Bryan. Each winter we sent him to Florida. He was a grain dealer, and

a few days before he consulted this Dr. Roon Walden he made a trip into Indiana and bought several thousand bushels of oats. He came home and stayed a few days, and as Dr. Bryan and myself had never given him any encouragement about a permanent cure, he left, going to Cincinnati, and consulted this quack without saying anything to Dr. Bryan or myself about it. This Dr. Roon Walden charged him \$500.00, payable in advance, to cure him. He kept him in Cincinnati long enough for the check to get to Nashville and be returned and paid off at the Nashville bank and then he sent him home, with a telegram to Mrs. Kerr to meet him at the train, as he was "not very well." When we met him we found him unconscious and only lived about three hours after getting him home, and was never able to tell us anything about what Dr. Walden did to him.

After his death, I registered a letter to Dr. Roon Walden, stating that we would not stand for a thing of this kind and he had better return the money. He failed to answer my letter, but sent \$350.00 back to my sister, after which we got in touch with a Mr. Richter, of the Richter Grain Co. of Cincinnati, who went to see him, taking a friend with him, and notified him that if he did not pay the other \$150.00 back he would arrest him and put him in prison. He gladly paid over the \$150, so Mrs. Kerr got her \$500.00 back.

As we understand the matter, this man, Roon Walden, was convicted some months ago for practicing medicine without license and was fined some hundred or two dollars and a jail sentence. The jail sentence was suspended with the understanding that he was not to practice any more.

We feel that the medical profession of the state of Tennessee, as well as the medical profession of Ohio, should know the character of this man. These are the facts in the case, and I am sending this letter to Dr. O. N. Bryan for his signature, as well as mine, and for any further information about this quack, I refer you to S. S. Kerr (a brother of J. W. Kerr), Independent Life Building, and Mrs. J. W. Kerr, 919 Fatherland Street, Nashville. You can print this or abbreviate it, as you see fit.

Yours very truly,

W. S. FARMER, M.D.,
O. N. BRYAN, M.D.

We print this letter because we are informed that other Tennesseans have been imposed upon just as was Mr. Kerr.

RAPID GROWTH OF THE BIRTH REGISTRATION AREA.

Congratulations to Maryland, Virginia and Kentucky, the latest states to be admitted to the Registration Area for Births by the Director of the Census, Sam L. Rogers.

The Registration Area for Births was established in 1915 and was then composed of ten states and the District of Columbia, representing 10 per cent of the territorial extent of the United States, but containing 31 per cent of the country's population. For this area the Bureau of the Census has recently issued its first annual report, entitled "Birth Statistics." As the area grows the annual reports will deal with the births in a constantly increasing portion of the country and will, therefore, become of constantly increasing interest and value.

The outlook for a very rapid growth of this Registration Area for Births is so good that a word of cheer to the states outside should be given. The need of complete birth registration is recognized now as never before. The age of the soldier must be known, and so a new argument for birth registration comes to the United States. Since war was declared tests of the completeness of birth registration have been made by special agents of the Census Bureau in Virginia and Kentucky, and both these states secured a rating of over 90 per cent, which represents the degree of completeness required for admission to the area. Similar tests are now being made in Indiana and New Jersey, and before the year is over will be conducted in North Carolina, Ohio, Utah, and Wisconsin. Several other states are nearly ready to seek admission, and it is by no means a wild prediction that the Birth Registration Area within the next two years will be more than trebled in size and will contain over two-thirds of the population of the United States.

One physician recently became so thoroughly aroused as to the desirability of recording births that he reported to the local registrar 450 births which had occurred in his practice since 1900. Parents and physicians everywhere are awakening to the importance of this matter and the fashion now is to register baby's birth.—Bulletin Bureau of the Census.

NOTES AND COMMENT

Dr. Guy Reesor, Church Hill, is at Fort Oglethorpe as Lieutenant, M. O. R. C.

Dr. G. E. Wilson, Rockwood, is at Camp Greenleaf, Fort Oglethorpe, having been commissioned Lieutenant in the Medical Reserve Corps.

Dr. Jo. B. Wright, Pulaski, Lieutenant M. O. R. C., is in training at Camp Greenleaf, Fort Oglethorpe.

Dr. Ralph Richardson, Bristol, Lieutenant, M. O. R. C., is at Camp Greenleaf, the training camp for medical officers at Fort Oglethorpe.

"Tell all who have any idea of going into the Medical Reserve Corps that the work of the training camp is essential for the man who wants to make good in the Army." This request to the Journal comes from one who has "made good" in the training camp at Fort Oglethorpe.

Dr. C. S. Briggs, Nashville, has been made chief surgeon of the Tennessee Central Railroad, succeeding Dr. L. E. Burch, who has been assigned to duty as Major, M. O. R. C.

Dr. B. F. Loring, Union City, has been commissioned an officer in the Medical Reserve Corps.

The School of Medicine of Vanderbilt University opened the 1917-18 session on October 1 with a larger attendance than was expected. The first year class, in spite of higher entrance requirements, is considerably larger than last year.

Burch's Infirmary, Nashville, has been closed, Major L. E. Burch having been ordered to report for active service in the M. R. C.

Dr. Rogers M. Herbert, Lieutenant, M. O. R. C., is in service with the Field Hospital at Camp Sevier, Greenville, S. C.

Dr. Hiram Laws, Lynchburg, is now a Lieutenant, M. O. R. C.

Dr. C. C. Odom, lately Assistant Superintendent at Central Hospital, is now on duty as Lieutenant, M. O. R. C., in the psychiatric department of the base hospital at Camp Custer, Battle Creek, Mich.

Dr. B. C. Arnold, Jackson, is with the 317th Infantry at Camp Lee, Petersburg, Va., as a Lieutenant, M. R. C.

Dr. C. A. Robertson, Ridgetop, Lieutenant, M. O. R. C., has been ordered to report for duty at Fort Benjamin Harrison, Ind.

Dr. C. H. Glover, Memphis, Lieutenant, M. O. R. C., is at the Army Medical School at Washington for a course of instruction.

Drs. B. N. White, J. J. Rueker and J. T. Harris were the contributors to the program of the Rutherford County Medical Society at its regular meeting on October 3.

The eighth annual meeting of the American Association for the Study and Prevention of Infant Mortality will be held at Richmond on October 15-17.

Dr. Carroll G. Bull, of the Rockefeller Institute, delivered an address before the Knox County Medical Society on September 28th, describing the method devised by him for the prevention and treatment of gangrene from gas bacillus infection. Dr. Bull was formerly a resident of Knoxville and a banquet in his honor was given by his Knoxville friends among the physicians during his recent visit.

You've always wanted to be a coupon-clipper. Your chance is here. Buy a Liberty Bond!

The Journal knows of a good country location which will soon be open. See the advertisement of Dr. Ellis in this Journal.

We are short on "Army News" this week. It's hard to get and harder to get right.

Bonds of the Second Liberty Loan can be purchased through any bank or Liberty Loan Committee. It is necessary to fill out an application blank made on a regular form and the application must be accompanied by the payment of two per cent of the amount of bonds applied for. Applications will be received until October 27th. These bonds bear four per cent. Buy one of the biggest denomination within the reach of your present pile and future saving ability.

The Medical Reserve Corps needs more men yet—and more Tennessee men. Our quota has not yet been filled.

Don't forget to look through our advertisements. Remember to buy from the Journal's advertisers. You will thus help the Journal, the advertisers and yourself.

The Alumni Associations of Vanderbilt and of the University of Tennessee are very anxious to secure information concerning all graduates and ex-students who have gone into the Army, Navy, or other government war service.

Eleven crazy men and four with glass eyes were turned away from the Army camp at Louisville in one day. They had all been accepted by examining boards and sent to the camp. We can see how the crazy men got by, but how the glass-eye fellows made it is not so easily understood.

Did you read a paper at the Nashville meeting last April? Have you put it into the hands of the Secretary? If you did and if you didn't, do!

Dr. L. L. Meyer, Memphis, Captain, M. O. R. C., is at Camp Greenleaf as Instructor in Surgery and Medicine.

Dr. C. P. Knight, U. S. P. H. Service, is in charge of the work being prosecuted jointly by the Service, the State Board of Health, the Hamilton County Board of Health, and the City of Chattanooga for better sanitation in the five-mile zone around Fort Oglethorpe.

Dr. L. E. Burch, Nashville, Major in the Medical Reserve Corps, received orders in September to report at the University of Pennsylvania Medical School for a course of instruction in head and brain surgery. Major Burch will be assigned to one of the "cephalic units" which, it is thought, will soon see active service in France.

The Central Hospital for the Insane, located on the Murfreesboro Road six miles from Nashville, needs the services of an active young physician who is not subject to draft for Army service. This is a splendid opportunity for some man. Applications, accompanied by references **not "political,"** should be made to Dr. W. Scott Farmer, Superintendent.

Capt. Lee A. Stone, M. O. R. C., Memphis, is at Camp Hancock at Augusta, Ga., as instructor in gas defense.

Dr. E. C. Ellett, Memphis, ex-President of the State Medical Association, now a Major in the Medical Reserve Corps, is on duty in charge of the division of ophthalmology, section of surgery, at Annapolis Junction, Md.

Dr. T. W. Rhodes, Whiteville, Lieutenant M. O. R. C., is at Camp Wadsworth, S. C., on duty in the division of ophthalmology.

Dr. C. N. Griffith, Tullahoma, Lieutenant, M. O. R. C., is on duty at Fort Benjamin Harrison, Ind.

Dr. Roy Granberry, Bolivar, now a Lieutenant in the Medical Reserve Corps, is at Fort Benjamin Harrison, Ind.

Dr. W. C. Dixon, Nashville, Captain, M. O. R. C., spent two weeks in New York in September under orders for a course of instruction at the Rockefeller Institute.

Memphis is boasting of a great reduction in the typhoid incidence over last year. Here's hoping the good record will hold to the very end.

Dr. Robt. C. Davis, lately an interne at Lincoln Memorial Hospital, Knoxville, has been commissioned Lieutenant in the Medical Reserve Corps.

Major Battle Malone, M. O. R. C., Memphis, has been at the Rockefeller Institute studying the Carrel-Dakin methods of wound treatment.

Dr. W. G. Somerville, Memphis, now a Captain in the Reserve Corps, has been detailed for work on the Psychiatric Board.

Dr. W. J. Hillas, Memphis, Captain, M. O. R. C., has been assigned to the 51st Infantry as Surgeon.

Drs. Henry L. Douglas and Frank B. Dunklin, Nashville, Lieutenants in the Medical Reserve Corps, sailed for France early in September. These two fine young officers and physicians will see active service at once.

The paper of Dr. J. J. Waller in this number of the Journal can be read with profit by every practitioner of medicine in Tennessee. There are some valuable and extremely practical points in it which should be carefully considered anew by every man who may be called upon to commit a person to an institution for the treatment of insanity.

The Obion County Medical Society held its regular monthly meeting on October 8th, and received some new members. The essayists were not on hand, but Drs. Qualls, Glover, Marshall, Darnall, Smith, Trentzsch and Carlton had a good time together and voted the meeting a great success.

The Chamberlain Memorial Hospital is in course of construction at Rockwood. There will be thirty-four beds, with twelve private rooms, and the total cost of the hospital building will be \$50,000.

The new St. Thomas Hospital, Nashville, is now in full operation. It is one of the most complete hospitals in the country, a credit to its builders and a power for good in the care of the sick from the sections of this and adjoining states from which its patronage is secured.

Don't forget the Memphis meeting of the Southern Medical Association—November 12-15.

Dr. Frank Jones, Chairman on Membership and Publicity, has sent out a ringing invitation to every man eligible to membership in the Southern Medical Association to be on hand when the bell rings on November 12—at Memphis.

The Chisca, Gayoso and Peabody are the three leading Memphis hotels. If you are going to the Southern Association meeting, make your reservation now.

Quit telling folks that they have "torpid" livers and "sluggish" livers. Find out what's the matter with 'em and use more scientific and better justified terms. The doctor who is always finding "sluggish liver" is mighty apt to be a sluggish doctor.

Don't put down "congestion" or "slow fever" or "continuous fever" or "hives" or any other unscientific thing as the cause of death on your death certificate. Give this information as it ought to be given. It's no more trouble to do it right.

Just what is meant by "congestion"? If it's malaria, put it malaria, but not until you know it's malaria.

Just what is "slow fever"? If it's typhoid, put it typhoid. You can find out whether it is or not.

And what is "bold hives," "bowled hives", "bolloed hives", "boaled hives", and just "hives"—occasionally "hyves"? Is it enteritis? If so, put it so.

And "heart failure"! Oh, me! oh, my! One dies paralyzed in every muscle from "heart failure"; another passes out after a week's illness with high fever, due to something specific, from "heart failure"; and still another falls over dead with "heart failure." Why not make "heart failure" the one and

only cause for death? We've never known of one dead yet whose heart did not fail. We've known live ones to have "heart failure," though, without death.

The National Committee for the Eradication of Malaria will hold its meeting in Memphis on the first day of the Southern Association meeting.

The railroads will give reduced rates to the Memphis meeting of the Southern Medical Association.

Memphis is to have an open air school for children who exhibit a tendency toward tuberculosis.

Dr. W. S. Nash, Knoxville, addressed the Hamblen County Medical Society on the subject, "Medical Preparedness," at the September meeting.

Dr. J. M. Smythe, Camden, has received his commission as an officer in the Medical Reserve Corps.

Drs. Wm. and Chas. Mayo, the great Minnesota surgeons, have contributed a sum said to be in excess of \$1,500,000 to the endowment of the University of Minnesota.

Dr. Dabney Minor, Cleveland, now a Lieutenant, M. O. R. C., is at Camp Greenleaf, Fort Oglethorpe.

Dr. Jno. W. Morris, Fayetteville, is on the battle line in France serving as a medical officer. Dr. Morris has also seen service in Flanders.

Nearly two-thirds of the physicians of Fayette county have applied for commissions in the Medical Reserve Corps.

The McNabb Sanitarium, Knoxville, is a new institution established with five prominent Knoxville physicians as incorporators.

SOCIETY PROCEEDINGS

COFFEE COUNTY MEDICAL SOCIETY.

The Coffee County Medical Society met at Tullahoma on September 26 with the following members present: Drs. Farris, H. M. Farrar, Sr., H. M. Farrar, Jr., Mitchell, Powers, Sneed and Ward. Dr. J. E. Powers presented his transfer card from the Henderson County Medical Society and was accepted and welcomed into membership. Arrangements were made for the entertainment of the Middle Tennessee Medical Association, which is to meet at Tullahoma in November. Dr. Powers was chosen Secretary to fill out the term of Dr. Chas. Griffith, who has been ordered to Fort Benjamin Harrison. At the evening session, which took the form of a public meeting, "School Hygiene and Sanitation" was discussed by Drs. Farris, Mitchell, Farrar, Sr., and Farrar, Jr. The next meeting of the society will be at Manchester on October 31.

J. E. POWERS, Secretary.

MISCELLANEOUS

IODINE OINTMENTS.—An examination of iodide ointments made in the A. M. A. Chemical Laboratory by L. E. Warren demonstrated that when made according to the method of the U. S. Pharmacopoeia (dissolving iodine in potassium iodide and glycerine and then incorporating with benzoated lard), about 20 per cent. of the free iodine used combines with the ointment base. On standing for a month a further quantity of 5 per cent. goes into combination, and after this no further loss of iodine occurs. The composition of iodine ointment, U. S. P., after a month or more is approximately: free iodine, 3 per cent.; iodine combined with fat, 1 per cent.; potassium iodide, 4 per cent.; benzoated lard (containing combined iodine) 80 per cent. The U. S. Pharmacopoeia requirement that iodine ointment shall be freshly prepared appears to be unnecessary. It was also found that if iodine ointment is made without the addition of potassium iodide, practically all of the free

iodine enters into combination with the fat (Am. Jour., Aug. 1917, p. 339).

Neodiarsenol.—Neodiarsenol has the composition, physical and chemical properties and action, uses and dosage as given for neosalvarsan in New and Non-official Remedies, 1917. Neodiarsenol is supplied in ampules containing, respectively, 0.15, 0.3, 0.45, 0.6, 0.75 and 0.9 Gm. neodiarsenol. Neodiarsenol is accepted for New and Non-official Remedies, as the available supply of neosalvarsan seems to be insufficient to meet the demand, and this preparation conforms to the rules of the Council. Neodiarsenol is made in Canada under a license issued by the Commissioner of Patents of Canada. The Farbwerke-Hoechst Company holds the sale of neodiarsenol in the United States an infringement of its rights, and has stated that all violations of its rights will be prosecuted. The Diarsenol Company Limited, Toronto, Canada (JOUR. A. M. A., Aug. 4, 1917, p. 383).

BOOK REVIEWS

THE ROENTGEN DIAGNOSIS OF DISEASES OF THE ALIMENTARY CANAL. By Russell D. Carman, M. D., and Albert Miller, M. D., Mayo Clinic. 558 pages, with 504 illustrations. W. B. Saunders Co., Philadelphia, 1917. Cloth, \$6.00 net.

The immense amount of material available for study by Drs. Carman and Miller has enabled them to make most extensive investigations into the question of the reliability and constancy of Roentgenologic signs. Their widely recognized ability entitles their published conclusions to carry with them a great deal of weight, especially when it is remembered that in the great Mayo Clinic, where their work is done, every division and department works in conjunction with every other division of the Clinic to confirm or to reject as significant or otherwise, as the case may be, the findings in all the investigative processes entered into by the various workers. The conclusions presented by the authors of this book are strongly justified by the facts as they have found them and as they have stated them in the body of the book. There is nothing overdrawn and no "hobby riding" indulged in. Your reviewer considers this the best thing in print on Roentgen diagnosis of diseases of the alimentary tract. The illustrations are unusually good and most of them are extremely helpful to the reader of the text.

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THE JOURNAL

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GLAUCOMA*

By E. C. Ellett, M. D.,
Memphis.

It is not the purpose of this contribution to take up your time with any discussion of the causes of glaucoma, since we do not know the cause. I have no new theory on the subject. The symptoms are too well known to need recital to you, and we need only bear in mind that nothing is more certain in medicine than the hopeless outlook for untreated glaucoma. Two matters in regard to diagnosis and several points regarding treatment will furnish my text.

While the tonometer has its limitations, and increased intraocular tension does not always have the same significance, any more than same degree of increase in blood pressure has the same significance in different people, the tonometer is such a great improvement over the digital method of estimating the tonus oculi, that we should all use the instrument whenever it is desirable to determine this point. There are three instruments on the market, the Schiötz, the Gradle and the McLean. The Gradle is a modified Schiötz and seems to be superior mechanically. It is at any rate simpler and cheaper. The calibration of the two, and therefore the readings, are the same, and indirect, that is, the reading has to be translated by a scale or table into millimeters of mercury. The normal is 20 to 25. The McLean instrument is larger, heavier, apparently more substantially

made and so calibrated that the normal is 40. The reading is direct. Whether 20 or 40 is normal does not matter if we record the instrument used, just as records of temperatures are satisfactory when made with different makes of thermometers. A short use will convince any one that the tonometer is more reliable than the digital method. It is generally advised to use holocain anaesthesia before applying the foot plate to the cornea, but cocaine is satisfactory, and the subsequent use of eserine will draw the pupil down again. The patient should lie down and the lids should be carefully retracted before applying the instrument. Two or more readings should be made.

While the pupil and the ophthalmoscopic appearances should always be regarded, the visual field is most important from both a diagnostic and prognostic point of view. Indeed, the vision and fields are the best guides to the progress of the disease, and the perimeter is an instrument of diagnosis which we do not use enough. This neglect is not general, but local. I mean that it is too seldom that reports of cases among us indicate that the perimeter is used as freely as it ought to be, since its value in diagnosis, and especially in noting the progress of a case, is very great. Elliot ranks the condition of the visual field as first among the signs indicating the progress or lack of progress of the disease process in glaucoma.

With reference to treatment, it is very sure that the earlier treatment is undertaken, the better are the results apt to be. To put it another way, the treatment of glaucoma is a different proposition according to whether or not the angle of the anterior chamber has

*Read before Section on Ophthalmology and Otolaryngology at Annual Meeting Tennessee State Medical Association, April, 1917.

been occluded by the adhesion of the root of the iris to the cornea. If this has not occurred, then myotics may enable one to hold the disease in check, or if not, then an iridectomy, properly performed, will answer and do all that any surgery can do. If, however, the angle is occluded, then neither of these measures will answer and some form of sclerostomy is necessary. It seems to me that this is the reason why we feel that in acute glaucoma iridectomy answers every purpose and a sclerostomy is not needed.

In simple glaucoma, myotics, used faithfully, will hold some cases in check, as illustrated by the following case:

Miss G., age 42, glaucoma simplex R. since 1901, during which time she has been on myotics. March, 1916, V—20-20 M. Tonom (McLean) 55. Field practically normal.

In watching such a case, Elliott's advice is to note (1) the field, (2) the tension, and (3) the visual acuity, in this order, as giving the best indications of the progress of the disease and the results of treatment.

If other measures fail, then surgical treatment is indicated. As already stated, this may be iridectomy, sclerostomy or some form of drainage by a seton.

Iridectomy will probably answer in cases in which the angle of the anterior chamber is free. In deciding on the comparative value of iridectomy, this question should be taken into account, and no doubt it will be found that the condition of the angle determines in which cases iridectomy will succeed and in which it will fail.

There are many methods of sclerostomy, with only two of which I am familiar, namely, the trephine and the LaGrange operation. There are many other methods, too numerous to mention, but I know them only by name. Of the two with which I have had experience, I rather lean to the LaGrange operation, for the following reasons:

1. The technique does not involve the use of any new instrument but those with which the operator is already familiar, an advantage to the occasional operator.

2. The incision is large, giving freer access to the iris and making complete iridectomy—always desirable—easier.

3. The conjunctival flap is thicker, applies itself more readily, does not need suturing and late infection is not so frequent (if indeed it occurs at all) as after trephining.

4. In my hands the LaGrange operation has succeeded better than the trephine, and sometimes when the trephine has failed.

5. The LaGrange operation is less painful than the trephine.

Various plans of producing a permanent drainage by means of the introduction of a foreign body have been advocated, namely, the use of a thread passing from the anterior chamber into the sub-conjunctival space, by Zorab and Casey Wood, the use of a gold wire, the so-called mule shoe drain of Prince, and the use of a knuckle of iris, that is a prolapse of a knuckle of iris, by Borthen. I have seen these done, but I have no personal experience with any of them.

April 12, LaGrange, left eye.

J. A., aged 56. Glaucoma simplex.

O. D. V.—6-200. O. S. V.—16-65

April 5, 1912, iridectomy, right, eye.

April 12, LaGrange left eye.

April 7, 1914. Tension R, 57, Gradle. L, too soft to measure. V=5-200 and 20-40. LaGrange operation, R eye.

Oct. 7, 1916. Tens. R. 14 V=6-200. L Tension normal to fingers V=20-40.

In this case the LaGrange operation relieved the hypertension after iridectomy had failed to do so.

J. B., aged 60. Seen Feb. 21, 1917.

O. D. failing two years, blind one year.

O. S. failing recently.

O. D. vision=0. Pupil widely dilated, Ball injected, some opacity of lens obscuring the fundus. Tension 130.

O. S. disc deeply cupped. Vision 15-70. Tens. 100. The upper and inner half of the field is lost. Lens clear.

Feb 27.—Trephined O. D. and did LaGrange O. S. The latter was difficult as the patient would not look down and a short scleral flap resulted. Complete iridectomy in both eyes.

March 22.—O. D. unchanged. Pupil dilated and tension 130. O. S. Tension 40. Field slightly enlarged. A considerable lens opacity is present, obscuring the fundus. Vision=

moving objects. In this case the LaGrange operation reduced the tension, the trephine did not.

B. S., aged 40, seen in 1899 for poor vision. No sign of glaucoma, but vision was only 15-25 with glasses.

Left Eye.—In 1902 he had a mild attack of inflammatory glaucoma in the left eye, and the disc was found to be cupped. The condition improved under eserine, but an iridectomy was done in July, 1902, and anterior sclerotomy in November and December of the same year. The iris prolapsed into the wound the last time and was excised, leaving a wide coloboma. In February, 1903, the vision was 20-40 minus, and a cystoid scar was present. In October, 1902, a sector-like defect appeared in the lower nasal field of the left eye, which disappeared after the two sclerotomies. The field was normal in 1914, but in 1915 a sector defect appeared down and in, and soon involved the fixation point. In November, 1916, the lower and inner half of the field, including the fixation point, was lost. The vision in O. S. remained about 20-40 until 1915, when it began to deteriorate. February, 1915, 10-200; March, 1915, 7-200; April, 1915, vision excentric. The tension remained low and in February, 1916, was 35 (McL.).

Right Eye.—In 1911 he saw halos, green outside and red inside, and was put on myotics. July, 1912, tens. 58 (Gradle), vision 20-40. In 1913 diagnosis glaucoma confirmed by Herman, Knapp and Wolff. In January, 1913, LaGrange operation. Feb. 8, tens. 55 (Gradle), vision 20-30. March 3, tension still up, trephine up and out. Feb. 19, 1916, vision 15-25. Field normal. Has to use myotics, which keeps tension 50 (McLean). March, 1917, same. This is the only case in which I have succeeded with the trephine after failing with the LaGrange.

Mrs. A. B. W., aged 53. Oct. 25, 1913, noticed a black spot before O. D., and on reading, objects looked blurred.

O. D. 20-20 p.—50x180=20-20.

O. S. 20-20 p.+50x90=20-20.

The right eye showed a few fine vitreous opacities, the left one fixed one on the posterior lens capsule, in from the center. She was under my treatment for six months, dur-

ing which time the opacities became more noticeable. She was given various forms of alterative treatment, sweats, galvanism, and mercury. Her physician could find no constitutional disturbance. In June, 1914, she returned from a visit to Texas. I had seen her on March 7, and noted vision 20-25 partly and vitreous not quite clear. On March 16, she consulted Dr. J. S. Steele, of San Antonio, who found vision 15-100, and was unable to see the fundus. There were posterior synechia, which he was unable to break up, some pericorneal injection and he thought the tension was increased. A Wassermann was negative, but she received four doses of neo-salvarsan and iodides, and the pericorneal injection disappeared. He did not mention any local treatment. On June 14 there were posterior synechiae, and the tension was 63R and 52L. Vision O. D. 15-100, O. S. 20-25. The fields are as illustrated. Blood pressure 145. Under eserine and massage the vision rose to 20-40 O. D., and the tension remained about the same. July 10, sclero-corneal trephine O. D. A peripheral iridectomy was made as the adhesions prevented drawing out the iris to make a complete one. July 27, tension 24 in each eye. Vision, O. D. 20-40, O. S. 20-20. The fields in O. D. were very small. The vision in O. D. gradually failed and the tension gradually rose, till in March, 1915, the former was p.l. and the latter 52. April 5, 1915, LaGrange operation. O. D. with complete iridectomy. The operation was perfect surgically, except a mass of pigment was left on the capsule where the coloboma joins the pupil. The tension was reduced. In November, 1916, it was 135 McLean. The eye is blind, but painless.

The left eye has shown variable tension, from normal to 52 (Gradle). The vision is normal but the field shows contraction as shown on the charts. There has been one mild attack of iritis in O. S. in February 1915, since which myotics have been used once a day. The nerve is slightly gray and slightly, but distinctly, cupped.

Mr. A. V., aged 43, was seen first in 1908, with a history of recent poor vision in the right eye. He had had syphilis twenty years before. Vision O. D. 20-200, O. S. 20-20. The right nerve was atrophic and cupped; ves-

sels normal. Left nerve very white, with large cup. It was not clear that this was pathological. The pupils, tension, and anterior chamber were normal. Right pupil reacts directly and consensually, but left does not react consensually. Knee jerks normal. The tonsils were enlarged and the septum deflected. The hearing is failing. He was treated for several months with iodides and sweats, and the vision of the right eye improved to 20-60 partly. There was no change in the pupils, and the fields were as shown on chart No. 1. The tension in the right eye

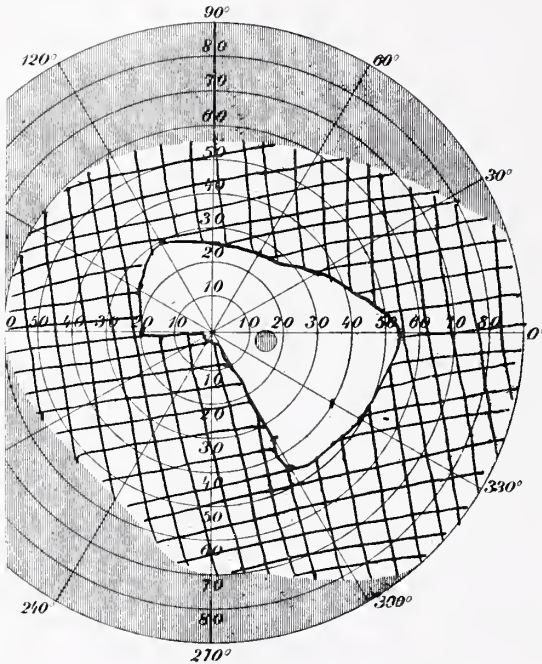


Chart No. 1

was then plus 1. Pilocarpin locally was added to the treatment. A month later, vision 20-50. Operation on the right eye was advised. I did not see the patient again for two years.

Jan. 5, 1911: Had been under treatment in St. Louis. The tonsils were removed and the septum operated, with excellent results. He had had no local eye treatment, but much strychnine and iodides. Vision O. D. pl., O. S. 20-30. Both nerves were pale and cupped; tension plus, more so in right eye. Pupils active. Eserine contracted the pupils and reduced tension, and vision became 20-20 in O. S. In February he had a slight inflammatory attack in O. D.

April 10—O. S. 20-20. Fields as in chart No. 2. At my advice, he went to Chicago for

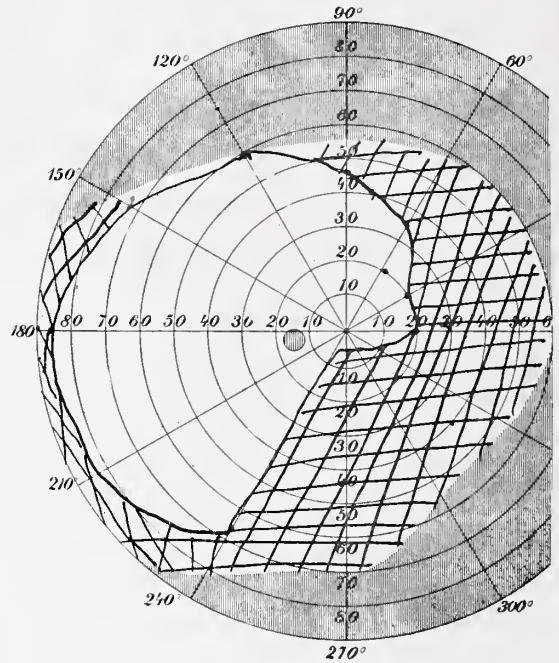


Chart No. 2

consultation, and both Dr. Wilder and Dr. Casey Wood made a diagnosis of glaucoma. He also saw Dr. Schneider, of Milwaukee, who gave the same diagnosis. The Wasserman, made now for the first time, was negative.

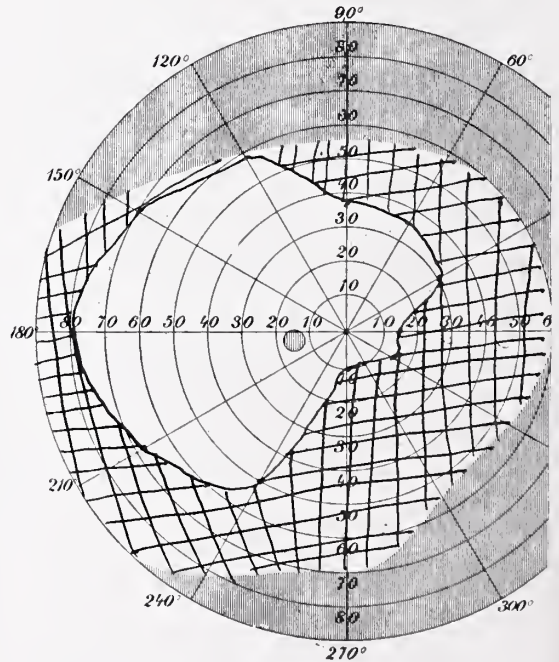


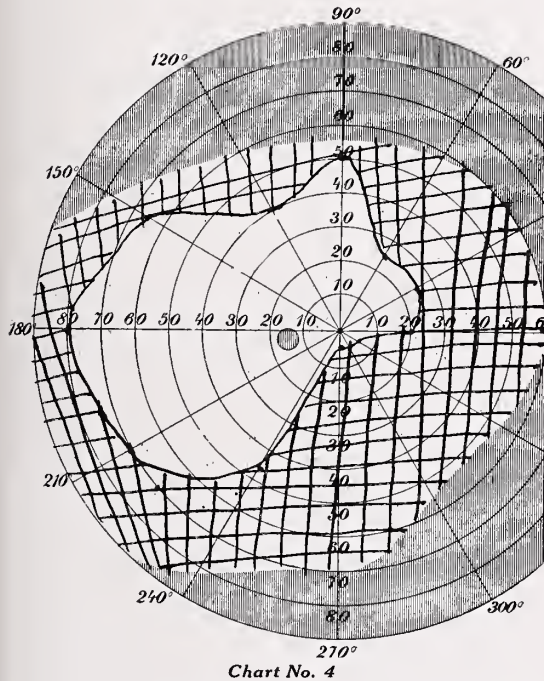
Chart No. 3

May 4, 1911—Iridosclerectomy, according to LaGrange, on the right eye.

May 10—Same, left eye.

May 29—Normal operative recovery. In O. S. vision 20-25, with +50=—5x90. One iritic adhesion in each eye and some pigment on capsule of lens.

June 12—Fields as in chart No. 3.



November 27—Tension normal to fingers.

February 6, 1913—Tension O. D. 60, O. S. 22-28 (Gradle).

December 15, 1914—Vision O. S. 25-25 and J. 11, with glasses. Field as shown. Tension 57 and 24 (Gradle).

May 29, 1915—Tension 52 and 24.

November 3—Vision 25-25, with glasses.

Patient died in December, 1916. As the result of the operation, his vision, field and tension in the left eye were held at a standstill for five and a half years.

DISCUSSION.

DR. G. C. SAVAGE, Nashville: I will speak briefly of the use of myotics. When we find that the pupil does not readily respond to the myotic, it is useless to continue it. If it responds, or if the tension is held down and the field continues the same, then it is a question as to whether we ought to do any sort of operation; but if the eserine does not contract the pupil, if it does not deepen the anterior chamber, if it does not keep the pupil contracted for some hours, then it is useless to continue the myotic, especially if you find that the tension is not being reduced and the field is growing smaller.

Now when we are using a myotic, I am sure that we can get help by internal administration of a salt of calcium, which I have followed with the use of eserine. In several cases I am certain that with it we get some help in the reduction of the tension of the globe. I learned of the internal administration of the salt of calcium from Ait. The purpose had in view in the administration of this drug was to reduce acidosis, about which Fischer of Cincinnati, taught us some years ago. Whatever truth there may be in the theory of acidosis of Fischer, his treatment of glaucoma by injections, has been entirely given up by him as a curative agent of glaucoma, but the internal administration of chloride of calcium, or of iodid of calcium, is a safe thing to do, and I am sure in many cases is helpful.

Now a word as to the tonometer. Gradle has promised me that he would see if he could not get a model of the tonometer that would appeal to my way of thinking. I do not want to take the tension of the eye by placing a tonometer upon the delicate epithelium of the cornea. When Mr. Elliott was in our city he operated on four cases that I had saved for him, and he took the tension by means of the tonometer. In two of these cases the epithelium was destroyed and the patient suffered intensely until the epithelium had time to reform. Now the tonometer is a good thing, there is no question about that; but it ought to be so shaped that it could be placed on some other part of the eye than the center of the cornea. Why not have a tonometer so shaped as to place it on the sclera above and make the pressure at, or about, the same point that we are accustomed to making the pressure with our fingers? My suggestion to Gradle appealed to him, and he told me that he would put his wits to work and see if he could not get up an instrument that could be used in that way. If he succeeds in this effort, I shall delight to use it; but I do not want to use a tonometer by placing it on the center of the cornea. So much for the tonometer.

Now about the operative procedures. I suppose that those of us who have done the Elliott operation, so-called, of trephining, and those of us who have done the irido-taxis operation, would not think of doing the broad iridectomy of Gradle. It has been so long since I have seen a broad iridectomy, or have done one, that I have almost forgotten just how the operation ought to be done, but I am certain that of all the operations that I have mentioned, that of the broad iridectomy is the one that is least worthy of consideration.

Now, I am not in love with the Elliott trephine operation. I have done it, but I think that the Grange operation at all. He took a bite from the are so far superior to the trephining, and so much more easily done, that the one who does the La-Grange operation or the irido-taxis operation will not be much inclined to the trephining.

The operation of LaGrange that I saw first turned me absolutely against the operation, and I decided that I would never do it. Some of my fellow oculists were in St. Louis when Greenwood, of Boston, did the LaGrange operation, as he called it, which, according to the best information I have, which largely came from Ellett, was not the LaGrange operation at all. He took a bit from the posterior lip of the wound and not from the anterior, and he did an operation which did not appeal to me at all.

I had discarded the LaGrange idea—if that was the LaGrange. But four years ago, when I had an opportunity of going with Ellett out to the Memphis hospital, to see him do what he says was a real LaGrange operation, I turned my thoughts around, and I like the LaGrange operation as it has been depicted to you on the screen. It is one of the easiest operations in all surgery. I think that the incision as shown on this screen, is probably larger than is necessary. I do not make the incision quite that large, but I do the operation precisely as Ellett has depicted on the screen, and it is a beautiful operation. That little sclerotic part on the anterior lip of the incision just seems to pout and invite you to cut it off. It is precisely as shown by Dr. Ellett in the picture. I fell in love with that pouting lip when I saw him do it in Memphis. I had done that operation almost entirely until after my visit in Atlanta, in November, when I saw some beautiful results from the irido-taxis operation, and I fell in love with that. The fact is, I don't know hardly which one I am more in love with, the irido-taxis or the LaGrange operation. There is less traumatism in the irido-taxis operation than in the LaGrange; the irido-taxis operation is more easily done than is the LaGrange operation, as easy as that operation is done. It is a beautiful operation, the LaGrange is, and it is very easy to perform. When we are through with the LaGrange operation, we are through; there is nothing to happen there. But when we are through with the irido-taxis operation, we do not know whether we are through or not, because when we get through we may find that the iris has drawn back in the anterior chamber; but I think that can be circumvented. I think the opening in doing the irido-taxis operation for glaucoma is usually too large, and I am sure it has been too large when iris escapes incarceration. You want the opening in the superior corneal segment, having previously dissected the conjunctival flap, for you don't cut the conjunctival flap in doing the irido-taxis operation, as Dr. Ellett showed us on the screen how to make the conjunctival flap in the LaGrange operation. You must make your flap incision and draw the flap down before you enter the anterior chamber. And then if you attempt to enter with a Graefe knife, you are very likely to get the incision too large. If you attempt to use the broad spear knife, or keratome, you are liable to get it too large, but the very narrow, angular keratome will

make an opening sufficiently large, as a rule, to enter the delicate prongs of the forceps, with some little chance to slightly open the prongs of the forceps for grasping the iris and bringing it up into the incision. Smooth the conjunctival flap over it, and if it does not slip, you have a beauty. You have a condition then that will drain that eye, the tension will be kept down, the vision, as a rule, will be kept as good as it was before the operation, and frequently very much improved.

Now how can we insure that the flap which we have attempted to incarcerate may not slip its ancorings? Well, I told you one way to do it, and that is to have the incision very narrow, and another is to have the sphincter paralysed before you try to draw the iris up. For this use atropia. Of course we also use atropia in doing the Elliott trephining operation. If you do not use atropia before trying to incarcerate the iris, the contraction of the sphincter muscle will do its work more surely, and the effect will be to counteract the work you have done in that the knuckle of the iris will be drawn back into its place in the anterior chamber.

I believe that is all I have to say. I sometimes get a patient on the table thinking I will do the LaGrange, then I find myself doing the irido-taxis operation; and sometimes I think I will do the irido-taxis operation, and changing my mind I do the LaGrange. I just waver between these two, and I do not believe there are any other operations for glaucoma that are worth hardly considering.

DR. W. LIKELY SIMPSON, Memphis: Mr. Chairman and gentlemen, I have enjoyed the paper very much. There are one or two points I would like to discuss.

The first, whether we shall use eserine or pilocarpine as a routine. If one has complete control of a patient, at times, this is very well, but the patient that one sees to-day, and again in six months, or, if a patient lives in a distant town or in the country, this routine has its drawbacks.

As a general rule, some form of an operation, it seems to me, in such cases, would be indicated.

As to the question whether the LaGrange operation or trephine is indicated, I think we should remember that the trephine can be done several times on the same eye, if necessary. The LaGrange operation is, also, a more major operation, especially is this so if the tension is high. If the tension is very high the tendency toward loss of vitreous hemorrhage is more marked.

The next to the last case that Dr. Ellett gave us, I think, would be a case on which myotics would not work at all, if this case was not secondary glaucoma, due to iritis, etc., then of course only the LaGrange or the trephine would be indicated, and no such things as myotics would be indicated at all. In this case, I believe that LaGrange, with a good iridectomy giving good circulation from the posterior to the anterior chamber, would be an ideal thing.

DR. H. E. CHRISTENBERRY, Knoxville: Not that I am capable of discussing the paper—I think that the doctor's line of treatment is ideal—I just want to ask the doctor about what his experience or opinion is about the danger of infection through the conjunctiva after this operation; and then what your experience has been with glaucoma following a cataract operation.

DR. HILLIARD WOOD, Nashville: Regarding the use of the tonometer, I am a thorough convert to that. I remember the cases to which Dr. Savage refers which had abrasions from the use of the tonometer a few years ago, when used by Dr. Elliott himself. That may unfortunately happen occasionally, and has happened here to us occasionally, but very rarely, so rarely that I do not think it is to be weighed at all against the undoubted value of the tonometer. Abrasions do not happen often. It did happen with Dr. Elliott, that is true, and it has happened with me, also, but it seldom occurs, and passes off within a few hours. I have never seen any harm other than a little temporary soreness from it.

There is a point about the tonometer, viz., that any massage of an eye-ball reduces the tension temporarily. If the tension of an eye is taken with the tonometer three times consecutively, it will be noticed that the tension gets less with every reading, i. e., the tension with the second reading is less than with the first, and with the third reading less than with the second. That point was brought out, I think, by Dr. Jackson in Memphis, at the recent meeting there. You gentlemen may recall it. Since coming home I have repeatedly tested this out, and found it to be true. Massages reduce tension, as is very well known. Elliott called attention to it. He did not discover it, nor does he claim to have discovered the therapeutic value of massage; but he speaks of it both in his book and in a letter which I had from him after he left here some three or four years ago. The effect of massage in reducing the tension is temporary.

Dr. Ellett speaks of the early diagnosis of glaucoma, and he quotes Elliott on that, viz., the taking of the field, the tension and the vision and not waiting for cupping of the disc. I think that is where we make a mistake generally. If we wait for cupping of the disc, we let the time of election for operation pass.

It has been said against trephining that it is followed by so-called "quiet" iritis. This iritis is not so quiet in every case. I have had more or less of it, as a rule, where I have done a peripheral pin-hole iridectomy.

At a recent meeting of the Clinical Congress in Philadelphia, last fall, where we had a symposium on glaucoma, it was brought out in the discussion and elsewhere in the clinics, that a pin-hole iridectomy is more likely to be followed by iritis than a complete iridectomy. It reminds me of the fact that after a surgical interference, most of our cases of iritis have followed peripheral iri-

dectomies. I believe it would be an improvement on the Elliott trephine operation to do a complete iridectomy. I have sometimes done that accidentally, but I believe it would be well to do a complete iridectomy instead of a pin-hole iridectomy; we would not have so much iritis.

With regard to iridotaxis, I saw it done in Boston in the fall of 1915. After coming home I did it three times, and without going into the details of the cases, I would say it is very easy to do, and the three in which I have done it have been very satisfactory. The eye in each case was almost hopeless, each was nearly blind from neglected glaucoma, and I did iridotaxis because I felt there was little to lose and everything to gain. The results have been good. It is true these are only three cases.

In doing iridotaxis, I wish to say that the iris will not stay incarcerated in the incision unless it is well under the influence of atropine before the operation. If any of you have not tried iridotaxis, I caution you that the iris should be well under the influence of atropine before the operation.

The question has come up, and was referred to by Dr. Simpson, I believe, a moment ago, as to when to operate. I think a good rule is not to operate as long as the myotics will maintain the status quo, as determined by the vision, the perimeter and the tonometer, repeated measurements in that way showing that the eye is not losing ground under the continuance of myotics. I believe that the use of eserine combined with pilocarpine in the same solution is better than either one alone.

Dr. Ellett did not refer, I believe, in his paper to the anaesthesia of glaucoma work. Now in simple glaucoma, most any form of anaesthesia is good; i. e., I mean local anaesthesia is practically complete. But we do know that in the more acute forms of glaucoma, the anaesthetic applied locally is not well absorbed, and when it is absorbed, is more rapidly carried away by the increased congestion, so that one does not get good local anaesthesia in the more inflammatory and the more acute types as can be had in the chronic, or non-inflammatory cases.

Two or three years ago I began the use of scopalamine-morphine anaesthesia as a preliminary to the local anaesthesia in glaucoma work. I was induced to do it in a rather nervous patient whom Dr. Savage and Dr. Cullom saw with me at St. Thomas Hospital two or three years ago. We used scopalamine-morphine anaesthesia an hour or so before the operation. It worked so happily that since that time I have used it almost as a routine in glaucoma operations, and I must say that I really like it. And in passing, I might say, by way of parenthesis, that we also use it in other operations under local anaesthesia, such as enucleation of the eye-ball, and it undoubtedly works well.

There are several operations for glaucoma that are more or less recognized, and the question comes up, when we are going to operate, which one shall we do? I believe it is true of every operator—I am willing to admit it is true of me—that he can do one of these operations better than he can do certain others. For example, I can do a better trephine than I can do a Von Graefe iridectomy. When we go to operate the first question is, which is the better operation? or which is the best of all these operations? But there is another question akin to this, and that is, which operation can we do better? I believe that an operation which is perhaps not quite so good as another, but which we can do better than another, is better for the patient than one which we cannot do quite so well.

DR. CHAS. HUFF DAVIS, Knoxville: I will say, gentlemen, that these remarks have no reference to the intra-capsular cataracts extraction, whatever, but with a Gradle tonometer and the Fischer lid hooks, you can get the tension in glaucoma very accurately. I was attempting, recently, a LaGrange operation. I think Dr. Potter was present and saw this case with me, when we encountered an involuntary extraction of the lens in its capsule, when we were using an ordinary speculum. For a fool wonder I did not have the Fischer lid hooks with me that day, and the patient squeezed. All of which reminds me that it has been very hard in my practice to get a complete anaesthesia of the eye, but when we have a nervous patient a general anaesthetic is indicated, because it certainly is safer. There has been nothing said about the Smith operation for glaucoma. I don't believe you referred to it in your paper, Dr. Ellett. I will recite the technic of the Smith operation, for it may be of interest. Smith retracts the lids with his own lid hooks, and with his own knife, which has a modified design of the Von Graefe knife, he goes into the cornea as though he were to do a cataract extraction, except that the incision is made on a line with the upper margin of the pupil, instead of the lower, then the knife is brought up to the iritic angle. The knife blade is turned straight upwards, the patient lying on his back. There is neither a conjunctival flap nor a scleral flap in this operation.

The vision in this case reported has been improved and the status quo (with apologies to Dr. Wood) has been maintained. I think he is right in that theory of sticking to the status quo. I used to think, and taught, that the presence of glaucoma was a surgical disease and should be operated upon.

DR. ELLETT (closing): Mr. Chairman, it is a question with me, not only in this, but in other things, as to just how far our responsibility goes with a patient. The point that Dr. Simpson

raised is that when you advise them, how far you ought to take into consideration whether that patient is going to do what you tell him or not. I am not sure that that ought to weigh very heavily in deciding the question between the drops and the operation, in these early cases. Even if you think the patient is not going to come back, it is their business and not your business, to follow out your directions. It would be simpler if the operation was an absolute and certain cure in every case; but of course it is attended with certain risks, and it is also attended with the possibility that no matter how favorable your immediate result is, it may not cure the condition. I have seen that happen in one of these cases that I have reported that for years the result was good and without any increase in tension the vision failed and I have seen one other case that I recall in which the vision departed under similar circumstances. Dr. Christenberry asked a question that I did not exactly get the drift of, about infection after these cases.

DR. CHRISTENBERRY: Just passing through and infecting the conjunctiva.

DR. ELLETT: I have never seen infection after an operation for glaucoma; I have never seen it after trephining for glaucoma; I have never seen it after the LaGrange operation; I have never seen it after iridectomy.

DR. CHRISTENBERRY: I heard the objection raised to it, is the reason I asked.

DR. ELLETT: That is merely a question of my limited experience, because no doubt I will see it if I live long enough.

The abrasions that the tonometer produce can be minimized by the use of a satisfactory anaesthesia, and getting the patient in a comfortable position. Even then you will find some of them that will want to wobble their eyes. I have never seen that but once as a result of taking the tension.

There is one result of these operations for glaucoma that should be mentioned in advanced cases, where there is a defect in the visual field near to the fixation point. LaGrange has made the point that in this case an operation may be followed by loss of sight. I have inquired about that from some other people, and some think it will, and some think it will not.

I am struck with the fact that the enthusiasm over the trephine operation is waning. We may still be doing it, but certainly the feeling is very different about it than what it was right after Col. Elliot's visit. I mentioned the fact in the paper about the complete iridectomy, that it was easier, I thought, after the LaGrange operation, because of the larger opening. I thought it was always desirable, and I got my impression largely from Dr. Parker's views, to which no doubt Dr. Wood refers.

A DISCUSSION OF THE SIMPLE AND RADICAL MASTOID OPERATIONS.*

By H. E. Christenberry, M. D.,
Knoxville.

I think it proper that we should take up some of the symptoms and indications of mastoid involvement before we proceed to go into the operations. "Be sure that you are right, then go ahead." We should acquaint ourselves with all history and symptoms of the case and use sufficient means of diagnosis until we feel sure that we have a mastoid involvement; and with our present day methods of diagnosis I am sure that we can easily make a diagnosis in the majority of our cases.

(The majority of mastoid involvements can be relieved without an operation, but this does not properly come under the head of the subject, and I merely mention it in the way of parenthesis.)

We should never be too hasty or delay operations too long. How many times have you seen a patient operated on for mastoiditis, when it was only periostitis of the mastoid process, or an acute infection which could easily have been relieved by a free incision of the ear drum to establish drainage, heat, leeches and other antiphlogistic measures. On the other hand, how many good people have we seen that died for lack of an early diagnosis and operation, or too long delay after diagnosis had been made. In these cases procrastination is not only the thief of time, but the thief of our patient.

The pathology in mastoiditis is about the same as found anywhere else in the body. Pain, tenderness, elevation of temperature, rapid pulse and swelling in the mastoid region. These symptoms may be absent and we can still have a mastoiditis. Then it is up to us to convict or acquit on the circumstantial evidence. We should use every means of diagnosis until we are satisfied with the proof in the case, at the same time using every preventive and curative measure. After care-

ful treatment and care for from four to six days, and the patient growing worse, it is our duty to operate.

Dr. Phillips of New York lays stress on the drooping of the posterior superior wall of the auditory canal together, with the bulging of the upper segment of the drumhead, as a point in diagnosis of mastoiditis, and I have found it true when there was no furunculosis in the canal. Another point of his is that he counts much on the comparison of the good ear with the diseased ear. In this way you can easily determine the amount of tenderness. With these symptoms following some history of otitis, elevation of temperature (which is not always present in adults, but usually present in young children), coated tongue, loss of appetite, without any other cause than an infected ear, you are safe in making a diagnosis of mastoiditis. But to be further convinced, I would advise radiography, as the X-ray will throw much valuable light on the trouble. A differential blood count is another valuable aid. It will show a marked increase in the leucocytic count if we have a mastoid involvement.

Now for the beginning of the subject—where I presume you supposed I would begin, from the subject as announced. Without some discussion on the symptoms and indications I would feel that an important part had been omitted.

With the above mentioned symptoms, when a good myringotomy had been done, good drainage established and other antiphlogistic measures had been religiously carried out from four to six days, and the patient growing worse, then I am ready to do a simple mastoid operation.

When we have had a chronic suppurative otitis media, long standing, no benefit from the best and most careful treatment, with acute exacerbations, with vertigo, chills, elevation of temperature, labyrinth involvement, facial paralysis or symptoms of depression or any impending danger of the patient's life, then I am ready to do a radical mastoid operation. And I would have to have most of these symptoms before I would have a radical done on myself.

We use about the same instruments in both operations. Of course, different operators pre-

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fer certain kinds of instruments which they are most accustomed to, and with which they can do better work. Some prefer the mallet, chisel, gonge, rongeur and curette; others use the burr; all expect to accomplish the same results. I have seen ideal work done with both, but personally I prefer the mallet and chisel, rongeur and curette. I think that I can control them better. They have their objectionable features. The jar is sometimes dangerous, but it can be controlled to a great extent by the care of the operator. The burr is a mechanical instrument and is not so easily controlled. It also leaves the surface on the bone so smooth that the granulation is slower and healing is delayed. I do not mention the scalpel or retractors, but I am sure that none of us would attempt to do a mastoid without them. I do not expect to mention all the details of either of these operations. The purpose of this paper is to bring out a liberal discussion.

It is not necessary for me to name the different steps in either the simple or the radical mastoid operation, as we all do our own modification of the other fellow's operation. It does not matter whose particular operation we attempt to follow, if we do a complete job in removing all diseased bone that is possible, and opening up all the cells and cavities of the mastoid from tegmen above to tip below, and a careful inspection of the cells of the root of the zygoma. It is not always necessary to expose the lateral sinus, but the inspection of it will many times save us the trouble of a secondary operation, and no little trouble to the patient.

The character and the amount of the pus will often be of much aid to us in determining the time and extent of the infection. In the acute stage we usually find more blood and less pus, and it is usually limited to the confines of the antrum. The amount is usually small where there has been free drainage, through the auditory canal. When there has been much delay we find more extensive involvement of the cells and probably a breaking down of the inner table. If we find granulations and a quantity of pus which continues to flow, and can see pulsations at the bottom of our opening, we may feel assured that the inner table is broken down and it is

Mother Nature that has saved, or is doing all in her power to save, our patient, and we are late appearing on the scene. These granulations should not be molested, as nature has thrown them out as a blockade to the further invasion of the disease.

We should proceed slowly and cautiously in this operation, especially when we go into the antrum and begin to enlarge it. Here we are more likely to injure the facial nerve. In the simple operation, with this care and precaution about going into the sinus on the bottom of our wound, as its supposed normal position is about as often an exception as it is a rule, we can usually steer clear of serious trouble. The injury to either of these is usually due to the careless handling of the instruments or trying to work in too bloody a field.

When the operation is completed the field should be mopped dry and touched with iodine and gauze drain put in. About one-third of the upper portion of the incision should be sutured, and for this I prefer the metal clips, and the other two-thirds left open for drainage. The canal should be kept well drained with a wick of sterile gauze loosely put in the entire length of the canal. For this I use a wick made by soaking the gauze in a saturated solution of boric acid in alcohol. Burn the alcohol off, then you have your sterilized gauze with the boric acid in its meshes.

The Radical Mastoid Operation.

This is a capital operation, requiring extensive dissection in the most complicated bone in the body, our purpose being to convert into one cavity the external auditory canal, tympanic cavity, aditus ad antrum, mastoid antrum and mastoid cells.

The incision differs some from that of the simple, as it can be made closer to the attachment of the auricle (about one-fourth of an inch). It is better to make the incision closer, as the scar is more obscured and we do not usually have to remove so much of the cortex over the posterior portions of the mastoid process. We proceed with the retraction of the parts down to the bone the same as in the simple, except the anterior flap should be reflected further forward, so as to expose the outer posterior margin of the bony

meatus. We then elevate the fibro-cartilaginous portion of the external auditory canal from the bone. With this retracted we proceed to remove enough of the cortex to determine the extent of our trouble, and then remove the posterior and superior portions of the wall, keeping in mind here that we have our semi-circular canal and facial nerve to consider.

The chisel is safest here, taking care to tap it lightly, the curette is about the safest instrument to use around the Fallopian canal, the oval window and floor of the aditus. All membranes, necrosed bone and granulation tissue should be removed. By incising the posterior wall of the membranous canal we can more thoroughly expose our tympanic cavity, which makes it more easy to remove the malleus and incus and curette out all granulation tissue and diseased bone. The tympanic orifice of the eustachian tube should always be well curetted away and a small curette passed into the orifice of the tube, and scarify it sufficiently that it will close up and prevent a greater per cent of infection and further trouble.

The kind of flap depends somewhat upon your case and the ideas of the operator. The main thing is to make your canal large enough. The wound should be mopped out dry. The incision should be closed and the drainage done by a wick of gauze in the canal, except in some cases it is best to put some drain in the incision, too.

The application of iodine over the operated surface is usually safe and advisable. The success of the operation does not depend so much on the kind of antiseptic and drainage in use, as it does on the thoroughness of the work and the condition of our patient when operated. Of course, we will do our best in each step and some of our patients will get well in spite of how much or how little we do, and others will die in spite of all we can do. "Man is born to die."

DISCUSSION.

DR. LEVY: As I found this case in Nashville, I feel it my duty to first report it here. First, let me lay stress upon the importance of taking radiographs. I believe so much in it that every case of mine has to have a radiograph taken first, of the mastoid. One thought thrown out by Dr

Beck, when he was in Memphis, was this: He said if the question of a lawsuit ever came up, which in some cases they do, you have your proof, regardless of your symptoms and your diagnosis, and where you work with charity patients it is a pretty good idea.

The case I wanted to report was a case that Dr. Cayce kindly had me operate on this morning. I cannot give it to you in detail, because I have asked him to report to me, but it is this: The patient had just recovered from measles, has been having tenderness and pain over the mastoid region; there was at no time an inflammation of the drum—there wasn't this morning when I saw it. There was a pain and tenderness over the mastoid and thickening of the tip. Upon opening the mastoid, we found pus. The destruction was rather extensive. The lateral sinus was exposed with some granulation tissue, and another point, in the anatomy of the lateral sinus, which was almost against the canal opening into the antrum. The opening between the antrum of the mastoid and the lateral sinus was very narrow, showing that the lateral sinus in this case was a little higher than usual. The reason I reported this was for the simple reason that there was at no time a middle ear involvement or bulging of the drum. I hope to report it later, although I found from my literature that there are cases reported, it is rather rare that you have a mastoid without some middle ear condition otherwise.

THE CHAIRMAN: No indications whatever in the canal?

DR. LEVY: No, sir, none whatever.

DR. BLUE: Dr. Virginius Dabney, I think it is, of Washington, reports a number of cases in which there is an "idiopathic" inflammation of the mastoid antrum.

DR. HILLIARD WOOD, Nashville: I have seen two or three of those cases. I cannot off-hand recall the details, but I have had them, and it has been in my mind as worthy of remembrance that the absence of suppuration of the middle ear does not disprove the presence of a mastoid abscess. It has been my custom to use the simple mastoid operation in acute cases and the radical mastoid operation in the chronic cases. This is just a broad, general sub-division.

There are a great many young gentlemen here, and I wish to say that I do not know of anything that qualifies one so much to do correct mastoid surgery on a patient as to do it repeatedly on the cadaver, and best of all on a head which has been separated from the body, the head being split open vertically in the antero-posterior direction, so that one can operate from the outside and look over the inside and make all the mistakes imaginable on purpose, and see what would be the result, and how to avoid making them on the living. Repeated operations on the cadaver I believe to be of the greatest help in doing mastoid work.

The books speak a great deal of this, that and the other operation, and in a general way the steps laid down in the literature are helpful. But when you come to operate on an individual case, what you want to do is not so much a technical radical or a simple operation, as it is to remove all pathology. The point I am trying to make is this: that you must individualize your technique in individual cases, and you cannot do the same operation in the same way on different cases. You must individualize.

DR. J. P. CRAWFORD, Nashville : I do not do much operating now on mastoids; I have been curing them all; but as this is an operative discussion, I have had three or four cases in which my after treatment—and of course I did the simple operation sometimes and the radical sometimes—but it had always puzzled me, or at least worried the life out of me, the daily after treatment—the eternal after treatment—dressings. So the last five or six years, I must say in that time I have operated only three or four times in acute cases, but I pack the ear, after doing all the operative work, with gauze, and allow it to remain for four days—three to four days—and by that time you will have a considerable granulation formed in the cavity, and then the first dressing. Allow the cavity to fill with blood, and I have, as I say, in the last three cases, just simply laying gauze, but not packing it again on the wound, but laying gauze on the outside, and put on the dressing. Now I have had one case that I only dressed three times; I had another case that I dressed six times. I had another case where the fellow got a re-infection by taking off the bandage, and it required eight or nine dressings. Another case, where the boy was a Greek, and he and I couldn't get along together; he couldn't understand me and I couldn't understand him, and he got the re-infection from wetting his head. As I let him go back to work in a restaurant, and finally, as my friend Price said, I used a little French at him, and he seemed to understand that. I asked him how the devil he got his dressing off, and he said: "Too hot! I washed my head." I had to go away in the meantime and turned him over to the family physician. Before I got back he left town, so I don't know what the result in his case was. However, I expect it was bad.

But as I say, in the past eight years I have only had about three acute conditions of the mastoid to operate on, because out of some sixty odd well defined mastoid inflammations, by using the hot water. I am not going into that discussion, because that branches off from the paper, and the time is too short to go into it any way.

DR. MCKINNEY: The type of mastoiditis of which Dr. Roberts speaks is what is called "blind mastoiditis." It is not a rare condition. I have had two or three of these cases. A case that I have under observation now is rather interesting. This woman had been having a discharge from one ear for six weeks, accompanied by mastoid

symptoms, when she came to me, having been referred by a colleague in a neighboring town. The perforation in the membrana tympani was closed, but she was still having considerable mastoid pain, although no fever. I had a radiograph made, and this showed a mastoid full of pus. It looks as though this patient is going to operation before she gets well, unless drainage through the eustachian tube into the throat should be sufficient to relieve the condition.

The drooping of the posterior superior wall that Dr. Christenberry mentions as an indication for operation is something for which I never look. In fact, I have almost ceased to regard that as an indication for operation. The indications for operation for mastoid abscess are rather individual. One cannot adopt a set of fixed rules to apply to all cases. It is a fairly safe rule to say that when the discharge checks, the temperature rises and pain increases, the case is one for operation. I had a case the other day of a child eight years of age, with a mastoiditis following measles. The discharge had continued for a number of days, with mastoid symptoms, and quite a high temperature in the afternoon, with subsidence toward morning. I insisted on operation, and sent the child to a hospital, prepared to do this. Inability to secure an operating room the morning on which I expected to operate, caused postponement of the operation until that afternoon. When I went out to see the child in the afternoon, the fever had subsided to nearly normal, the discharge had decreased, and the mastoid pain had lessened. For three days the child ran nearly a normal temperature, with a continued decrease in the amount of discharge and mastoid pain on pressure, but one morning she had a hard sweat, the discharge ceased, and the temperature shot up. I thought surely here was a sinus involvement. Operation a few hours afterward showed the usual necrotic mastoid, but a healthy sinus. The child is now practically well.

While some cases of mastoiditis will recover without operation, there are a number of them which will not do so, and in whom there is always danger of meningeal involvement. The trouble is, we cannot tell which patients are going to get well without operation, and if we play a waiting game in all our cases, we are going to lose some of them. The other day, at the Memphis General Hospital, I operated on a three-year-old child, in whom there had been a running ear for only six or seven days, and yet there was destruction of the entire mastoid process, clear down to the covering of the sinus. It has been some time since I have seen a case with such extensive necrosis in such a short time. This is one of the cases of the kind which I believe would not get well without operation.

DR. CRAWFORD: How do you try to cure them?

DR. MCKINNEY: By opening the drum, irrigating freely, and keeping ice packs over the

mastoid. The irrigation is used frequently—every two or three hours.

DR. CRAWFORD: Hot or warm?

DR. McKINNEY: I tell the mother or nurse to have the water as hot as she can stand to put her hand in it.

DR. CRAWFORD: That is not hot enough.

DR. McKINNEY: I am afraid I would have a burn of the first degree if I had it any hotter.

DR. J. P. CRAWFORD, Nashville: Mr. Chairman, in reply to Dr. McKinney, I wanted to just throw this suggestion out in order to bring up the after treatment in these cases, so far as the hot irrigation is concerned. I only mentioned it in passing. I reported its use in some cases here, in which the Academy of Medicine jumped on me; at the same time I had some men who were in consultation, and the hot water irrigation has done good in the hands of other men besides myself. My plan is this: To have the hot water started out not less than 115 to 120 degrees, and then get it up to 130 or 135, and the patients absolutely stand the water much hotter than the attendant can do it. And I had those cases irrigated from a half hour to an hour, some of them half and some an hour, depending on the severity of the case, and I see to it that it is hot. And as I say, in writing this paper, my records show sixty odd cases, and four or five of those cases were in consultation, in which the consultants can bear me out as to the effect of the hot water. Now I have kept up that irrigation every half hour or every hour for from twenty-four to forty-eight hours, and if you are going to get results you will get it in that time, with hot water. After that, if my patient does not get the relief in from twenty-four to forty-eight hours, then I say it is either operate or call in somebody to help me take the responsibility. And really I have not had but one case, that of an adult, in the acute condition, that I have had to operate on, and I am firmly convinced that was a tuberculous case. Of course, I have operated on two or three children that I could not use the hot water on, but I have several—not scores, but fifteen or twenty cases, walking around town here now, that had unquestioned operative mastoid conditions, as I formerly looked on this class of cases, and as practiced by the majority of men to-day, that are well and have not had any trouble for six or eight years. **And Dr. Wood can bear me out in one case, that he and I saw in consultation, as to the hot water. The hot water not only cures many of these cases, but the hearing is far better than after any operative process, and that should be one of our ultimate aims in this class of cases.**

DR. CHRISTENBERRY (closing): Mr. President and gentlemen, I hoped that we would have more liberal discussion. Just on the cases that Dr. Levy mentioned, that I recommended the radiograph, and I don't think that anyone should attempt to do an operation without having a radiograph, where it is possible. Nobody mentioned

the blood count, but I think that is of some value, too. I did not say that I cured all cases. I said that I believed that the majority of cases can be cured, and I still say that of mastoid involvement, as it has been my experience.

DR. McKINNEY: Oh, lots of mastoids get well.

DR. CHRISTENBERRY: I didn't say that all the cases could be cured without operation.

DR. McKINNEY: I said mastoid abscesses are not likely to get well—mastoiditis.

DR. CHRISTENBERRY: I didn't mention vaccines in there; I meant in getting the paper re-copied to get that in, but I think they are of value, too. The doctor mentioned the time of letting the drainage stay in, four days. I wouldn't let it stay in over forty-eight hours. I would not attempt to use the blood clot method of treatment, because I never saw any success in that. I would not use any ice pack on these cases; I would use heat instead, because when you commence to use the ice pack, you numb your nerve ends. The irrigations are all right in some hands, and in some other hands I do not think they are all right. You will have to direct these people, and have them do like you tell them, and you get pretty good results, but very often they do not think; they send the stream in there with too much force. I believe irrigation in the hands of some is more dangerous than it is good. I do not remember of any of the other things I wished to speak about. I do thank you gentlemen very much for this discussion. I was in hopes, as I said, that it would be more liberal, but I wanted to get something out of it.

I thank you all.

HYPERCHLORHYDRIA AS A CLINICAL ENTITY.

By George M. Niles, M. D.,
Atlanta, Ga.

The term hyperchlorhydria is applied to that condition of the gastric secretions in which the quantity of the gastric juice is normal, but the percentage of free hydrochloric acid is higher than normal.

While hyperchlorhydria as a pure neurosis is no doubt a clinical entity, the attitude of the medical profession is becoming more skeptical, and some of the surgeons go so far as to say that there is never any decided or lasting hyperchlorhydria without the presence of an organic lesion.

A neurotic hyperacidity is a secretory neurosis dependent upon the abnormal stimulation or inhibition of certain nerve trunks leading to the stomach. One point that causes some confusion is the fact that the

clinical symptoms of either primary hyperacidity or that brought about by some underlying and irritating lesion are practically the same. Occasionally there are few or no subjective symptoms, dependent, no doubt, upon a difference in the sensitiveness of the gastric mucosa. There are some individuals with a high degree of hyperchlorhydria who make little or no complaint.

This neurosis is found chiefly in young adults, though neither the young nor aged are entirely exempt. It is most often encountered in nervous individuals, those suffering from neurasthenia, melancholia, psychasthenia, or among those who are laboring under the stress of grief, worry or mental overwork.

There are no characteristic pathologic changes in simple hyperchlorhydria.

Diagnosis—This trouble, unless generated by some violent mental storm, develops gradually. The patient feels an uneasy sensation at a rather definite time after meals, the time depending to some extent on what has been eaten. When all is well mentally and the mind is diverted, this discomfort is noticed less or not at all. The sensations of distress or pain vary from one of burning in the epigastrium to severe cramping spells, the latter being probably caused by pylorospasm brought on by the impingement of the extremely acid chyme against that outlet. Connected with this there may be headache, excessive nervousness, dread of eating and generally constipation. Many of these patients find that they can ease the pain by eating some light, bland article while the hyperacidity is most painful. The appetite is generally good in these patients, and, unless they are on a limited diet, or have developed an exhausting sitophobia, they appear fairly well nourished.

Upon physical examination the epigastric region is generally sensitive to light pressure, but gentle and firm pressure often affords a measure of relief.

The diagnosis can only be confirmed by chemie examination of the stomach contents, as the symptoms alone, while strongly suggestive, are not infallible. The free hydrochloric acid will be found to range from 40 to 100 or even more, though the macroscopic

appearance of the test-meal is about normal. It is well to make, if possible, several tests, for it will be noted that the hyperacidity will vary according to the patient's mental status.

To make a positive diagnosis of hyperacidity as a neurosis requires the most serious thought, for the whole course of treatment depends upon the decision, and a mistake may lose for the patient much precious time, which could be utilized to better advantage otherwise.

The following diagnostic rules are adapted from Lockwood:

1. Do not make a diagnosis of hyperacidity until all organic lesions are excluded, and even then be prepared perhaps to change the diagnosis under later developments.
2. Do not make a diagnosis of hyperacidity without examination of the fasting stomach with the tube. The presence of acid fluid or of food remains, or any considerable amount of acid mucus should exclude the diagnosis.
3. Do not make a diagnosis of hyperacidity simply because the patient is nervous or neurotically sensitive. Individuals may be just as nervous in the presence of organic disease as without it.
4. Do not make a diagnosis of hyperacidity, should the previous clinical history suggest attacks that may point to appendicular or gall-bladder disease, or should the results of physical examination be such that these lesions are probable.
5. Do not make a diagnosis of hyperacidity in cases accompanied by acute epigastric pain, whether dependent or not upon the taking of food. Especially should this be avoided, if the pains occur at a definite period after eating, and are not influenced in their onset by emotional cause.
6. Do not make a diagnosis of hyperacidity if hemorrhage from the stomach or intestines be present, either visible or occult.
7. Do not make a diagnosis of hyperacidity in cases accompanied by repeated vomiting, especially if the vomiting be of the abundant type indicative of hypersecretion.
8. Do not make a diagnosis of hyperacidity when the symptoms occur at a time when the stomach is empty.
9. Do not make a diagnosis of hyperacidity in the event of the test breakfast settling into

layers, the supernatant fluid being more than twice the depth of the sedimentary layer. These are the cases of alimentary hypersecretion with which hyperacidity as a neurosis should not be confounded.

10. Do not make a diagnosis of hyperacidity in cases attended with anorexia, with nausea, with advancing anemia, and with progressive loss of flesh, especially if the patient be of adult years, and with previously good digestion.

11. Do not make a diagnosis of hyperacidity, without mental reservation, in any patient over forty-five who has recently developed the complaint.

12. Do not in any case make a diagnosis of hyperacidity without one or more gastric analyses.

Treatment—Hyperchlorhydria is in the main a symptom, and its treatment must be in the main symptomatic. After the physician has intelligently eliminated the possible organic causes, he may then set about treating the neurosis with a fair degree of confidence.

The chemie indications are naturally those of an alkaline nature, and the combinations will depend to an extent on the state of the bowels. These powders may be taken at about the time after meals when the first symptoms of discomfort appear, and repeated at half-hour intervals until relief is obtained. If the powder contains a laxative ingredient, it is well to give the patient two powders, one of which does not contain the laxative, instructing him to use the latter powder when repetition is necessary.

The following has been of service, and the ingredients may be apportioned to meet individual cases and conditions:

℞

Magnesiae ustae -----
Bismuthi subcarbonatis -----aa dr. iv
Sodii bicarbonatis -----oz. i

Sig.—One teaspoonful dry or in water one hour after meals.

Magnesiae ustae -----
Sodii bicarbonatis -----aa oz. i
Pv. rhei -----
Saceh. lactis -----aa dr. ii

Sig.—One teaspoonful one or two hours after meals.

℞

Cerii oxalatis -----
Bismuthi isubcarbonatis -----aa dr. iv
Magnesiae ustae -----oz. ss
Sodii bicarbonatis -----oz. i

Sig.—One teaspoonful after meals.

℞

Orthformi ----- dr. i
Bismuthi carbonatis -----dr. ii
Misturae rhei et sodii q.s. ad-----oz. iii

Sig.—One teaspoonful in a little water as needed.

Alkaline waters are practically useless, though water in abundance dilutes the stomach contents and aids the speedy evacuation of that viscus.

Belladonna and atropin have been recommended, though their efficacy is problematical. The dryness of the fauces and general discomfort following the administration of atropin cannot be atoned for by any assumed benefit. Extract of belladonna in 1-50 grain granules, given half an hour before meals, has seemed of service. This drug may be given up to one-twentieth of a grain three times daily; more than that is not advisable. In the very small doses it inhibits to a limited extent the excessive flow of the gastric juice.

Nitrate of silver, in one-fourth grain doses, given in a capsule or in water three times daily, has been recommended. It has not proved satisfactory in my hands.

Gastric Lavage.—This question of gastric lavage in hyperchlorhydria is sub judice at present. Whether the possible astringent and sedative effects of the lavage may not be overcome by the irritation of the tube and by strongly centering the patient's mind on his stomach is a debatable question.

I have employed with apparent benefit a lavage of nitrate of silver in warm water, 1:5000. This is preceded by a generous lavage of a warm saline solution. Stronger solutions of nitrate of silver are not, in my opinion, advisable, though the strength of 1:1500 is recommended by one good authority. Lavage on alternate days is often enough.

Rosenheim, of Berlin, recommends aluminum salicylate in doses of a half to one teaspoonful in water a half to one hour before

meals. This is in the market under the name of Neutralon (Kaulbaum) and may be tried in obstinate cases.

Goodman of Philadelphia advocates the use of one ounce of a 3 per cent. solution of hydrogen peroxide in a glass of water. This affords much relief from heartburn, though it exercises but little permanent effect upon the hyperacidity.

Olive oil has been recommended, owing to its supposed inhibitory effect upon the gastric secretion. A tablespoonful may be given half an hour before meals. If this is not well borne, a teaspoonful of the aromatic liquid alcohol seems to answer quite as well.

Dietetic Management of Hyperchlorhydria.

—Clinical observation has demonstrated that those articles of food which bind large quantities of hydrochloric acid are the best borne, and exercise the most desirable influences upon the overworking oxyntic cells. The burning feeling of distress or pain is relieved by the administration of albuminous food, while carbohydrates, if given in any quantity, will cause discomfort. The diet, therefore, is of the greatest importance.

All articles which tend to overstimulate the secretory glands of the stomach should be forbidden. Such articles comprise acids, spices, pepper, mustard, pickles, horseradish, olives, acid fruits, beer, wine, whiskey and the various tasty condiments and sauces.

The food should be rich in albumen, such as chops, steak, roast beef and mutton, game, eggs, milk, oysters and fish. None of these should be fried, however, as the frying tends to coagulate the albumen, making them much harder to digest. Bread and butter can be taken, the former in moderation. Green vegetables, such as spinach, tender mustard or turnip greens, asparagus, lettuce, peas and string beans, potatoes, rice and other cereals, should be given in small quantity. It is best, though, for these to be taken in conjunction with large amounts of albuminous food.

Alcohol in all forms should be interdicted. It is not always practicable to stop the use of coffee or tea, but these beverages should be allowed in small amounts and quite weak.

Kemp was pleased with the use of gelatin, employing 2 or 3 ounces of 5 to 10 per cent. gelatin solution, flavored with a pinch of sugar or a little vanilla, and given midway between meals. The value of egg-albumin and cocoa is marked. Starchy foods that have been well dextrinized as zwieback, dry toast, and some of the dextrinized cereals, are more readily digested.

Considerable water should be drunk with meals, unless advanced atony complicates the case.

Fats, such as butter and cream, are of value. Since the carbohydrates are necessarily limited, the fats are available for the supply of required calories; furthermore, fats lessen acidity, and perhaps the irritable tendency of the gastric mucous membrane.

It is often helpful in the dietetic management of hyperchlorhydria to give three additional feedings at a time after the regular three daily meals. The extra feedings may consist of lactone of buttermilk (very fresh), bouillon, a sandwich, raw eggs (especially the whites), and milk, with crackers or bread and butter. From this assortment of edibles, one can select an appetizing lunch.

For practical purposes an improvement in nutrition and weight, even though slight, should be sought in addition to the amelioration of the distressing symptoms. This is especially desirable in those who have been reduced in weight and strength by a too-limited diet. The scales should be brought into frequent requisition, and even though an apparently sufficient number of calories are ingested, if the weight does not show improvement, the regimen should be increased in some manner.

I do not believe that a pure neurotic case of hyperchlorhydria was ever cured by a limited and prolonged diet, and in cases of doubt the physician will find it safer and more satisfactory to allow and perhaps to insist upon, a liberal daily intake of food.

Hygienic, hydrotherapeutic and psychic measures have their same field of usefulness in this neurosis as in others affecting the stomach, so that time, thought and patience expended on these suffering, semi-invalids,

will in the great majority of instances, bring to the medical attendant results of the most gratifying nature.

THE CURABILITY OF SYPHILIS.

By W. A. Oughterson, M. D.,
Nashville.

In presenting my views on the subject, my conclusions are based largely on the clinical findings in old cases supposed to have been cured years ago, after many months, even years, of what would seem to be a rational line of treatment with our present light according to the history elicited from the patient. Apart from definite lesions, a positive Wassermann has been relied upon, together with therapeutic results, and such information as could be obtained from the literature.

In looking over my case records, I find seventy cases in which the diagnosis was made from the patient's own history, with such definite lesions as an aortitis, aneurism, orchitis, gumma of the liver, glandular involvement, brain and cord lesions, bone and X-ray findings and marked loss of weight not otherwise explained.

I am mindful of the fact that errors must have been made in diagnoses in this series. Granting errors were made, there still remains a large number in which the diagnosis was correct.

The shortest time elapsed in any case after having been pronounced cured was three years, while the longest time elapsed after cure was pronounced was forty-two years.

To go fully into the histories of these cases would consume much time, and take the place of much valuable data based on more reliable methods for determining a cure.

The histories given by these patients showed they had taken treatment for at least two years; some after two or three years' constant treatment took additional treatment at varying periods from five to ten years. It is interesting to note that some patients presenting symptoms even after several years constant treatment gave a negative Wassermann; still their symptoms cleared up after a period of treatment.

In reading an article by Wharton of Ann

Arbor, Mich., whom I have quoted freely in this paper, I was much impressed by his introductory remarks that the pathologist is constantly at odds with the internist. My early work in pathology, even though the time was short, left its impression with me as to the value of an effort at therapeutic application. This is especially true whether dealing with gonorrhoea, syphilis, or many of the acute infections. It is but a few years since the patient suffering with gonorrhoea was pronounced cured as soon as the urethral discharge had ceased, but it is now known that gonorrhoeal infected individuals, even though to all external appearances cured, are still carriers of gonorrhoea for years, if not throughout life, as dangerous to themselves, and especially to their future sex partners. It is but a few years since syphilis was pronounced cured after two years' treatment after the last symptom had disappeared. Then came the Wassermann. For a time it was thought syphilis was cured when a positive Wassermann could not longer be obtained. Since the spirochete has become recognized as the specific organism of syphilis, pathological investigation has furnished much new light. This light consists in the finding of spirochetes, either dormant or active, in the body tissues so that the question of curability of syphilis in any case has rapidly gained attention. This new stimulus has come through the pathologist.

I shall not try to bring further proof of the incurability of syphilis as the result of my own clinical observations, as it has become a well-established fact that absolute positive evidence rests with a most careful and painstaking autopsy. I say painstaking for the following reason—that latent syphilis is prone to be found in the heart, aorta, testicles, suprarenals, pancreas, and liver. The heart especially requires the most careful examination. It would require the full time of one man for a month to make a complete microscopic examination of the above-named organs to say positively that no lesions were present. Wharton reports six weeks spent on one heart before a definite group of spirochetes could be demonstrated.

I will report here eighteen cases of syphilis taken from the pathological department of the

University of Michigan, all of which gave a negative history of syphilis. No evidence of syphilis was found at examination, and all gave a negative Wassermann. The cases came to autopsy through various surgical procedures, or died as a result of other causes than syphilis direct.

Group 1.—Of the eighteen cases, sixteen showed syphilis of the heart, twelve showed syphilitic lesions of the aorta, thirteen lesions of the testicles, two lesions of the adrenals, one lesions of the spleen, two lesions of the liver, one lesions of the kidney, three lesions of the pancreas. It is worth noting that every one showed lesions of the heart or aorta.

Group 2.—Eight cases with history of syphilis but clinically cured are included, the time elapsed since cure was pronounced varying from three to forty years. Autopsy diagnoses in the eight cases were as follows: Lesions in the heart, eight; aorta, eight; testes, eight; liver, eight; suprarenals, two; cerebro-spinal, two.

Group 3.—Syphilis denied or suspected clinically. Case 1, venereal disease denied, no history of symptoms of syphilis, no Wassermann. Clinical diagnosis enlarged prostate. Pathological diagnosis eropous pneumonia, early meningitis, hypertrophy and dilation of the heart, arteriosclerosis, chronic nephritis, pyelitis, cystitis, prostatitis, syphilis of the heart, aorta, testicles.

Case 2.—Age 60. No history of syphilis, no Wassermann. Clinical diagnosis, cancer of stomach. Post-mortem showed syphilis of the heart, aorta, adrenals and testes.

Case 3.—Female, age 45. No history of syphilis, no Wassermann. Clinical diagnosis, tumor of the intestine. Post-mortem, syphilis of the heart and pancreas.

Case 4.—Male, age 43. Clinical diagnosis, tumor of the intestine. No history of syphilis, no Wassermann. Post-mortem diagnosis, syphilis of the heart, aorta, pancreas and testes.

Case 5.—Male, age 68. No history of syphilis, no Wassermann. Clinical diagnosis, carcinoma of the stomach. Post-mortem, acute syphilis of the brain, cord, heart, aorta and testes.

Case 6.—Female, age 40. Clinical diagnosis, broncho-pneumonia, adenomatous polyp

of the uterus. Pathological diagnosis, syphilis of the heart and aorta.

Case 7.—Male, age 66. Syphilis denied, no Wassermann. Clinical diagnosis, myocarditis, arteriosclerosis. Pathological diagnosis, acute syphilis of the heart, aorta, testes and adrenals.

Case 8.—Female, age doubtful. No history of syphilis, negative Wassermann. Clinical diagnosis, cancer of the uterus. Death after operation. Pathological diagnosis, syphilis of the liver and heart.

Case 9.—Male, age 59. Denied syphilis, no Wassermann. Clinical diagnosis, spondylitis deformans. Post-mortem diagnosis, syphilis of the heart, aorta, adrenals and testes.

Case 10.—Male, age 45. Denied venereal disease. First Wassermann negative, second positive. Pathological diagnosis, croupous pneumonia, chronic ulcerative colitis, chronic dysentery, amyloid spleen, syphilis of the heart.

It is to be remembered that many patients deny syphilis when they are well aware of their infection. It is equally common for those suffering with congenital syphilis to go through life perfectly innocent.

The lesions of active syphilis were of the same nature whether being actively treated or had had no treatment.

In the forty-one cases active lesions were found in the heart in thirty-six, aorta in thirty-two, testes in thirty-one, liver in four, adrenals in six, central nervous system in five.

Since five of these were women, and deducting the five, lesions were found as often in the testes as in the heart.

In order of their frequency the organs involved were, aorta, heart, testes, adrenals, pancreas, central nervous system, liver, spleen. In all cases of Class 2 the nervous system was found involved. Had the whole series been examined for lesions of the central nervous system, the number, no doubt, would have been much greater. It would seem to be indicated from this report that in the physical examination of a suspected case of syphilis, the heart, aorta and testes should receive a most careful examination.

It was interesting to me in reviewing the literature on syphilis to note the great frequency of syphilis in diabetics. Wharton

calls attention to six autopsies on diabetics, all of which showed histological changes of syphilis.

The question of transmission of syphilis by the seminal route has received much thought from the various workers. Views are held for and against such infection. When the lesions proper are considered, it would seem that the chance for infection is great. These lesions consist of vacuolization and disappearance of the germinal cells, hyaline thickening of the basement membrane of the tubules, with gradual obliteration of the seminiferous tubules. Spirochetes are found in the basement membrane in the early stage of the disease. The close relationship of the spirochete to the seminiferous tubules make the escape of the organism extremely probable.

In congenital syphilis and early acquired syphilis the tests have been found swarming with spirochetes. How they escape passage with the semen is rather difficult to understand.

Wharton reports his series of syphilitic material as coming from the University Hospital of Michigan, whose patients represent the middle class of the population of the State of Michigan.

Latent syphilis was demonstrated in about one-third of the adult autopsies. The greater part of these cases gave no clinical history of syphilis, and are in ignorance of having acquired the disease. This makes the sociological importance of syphilis very great, especially latent syphilis. From my own viewpoint, I regard it equally, if not more, important than tuberculosis. In my own work I can safely say I see two cases to one of tuberculosis. The cases coming under my observation are practically all old cases, or what has been termed the sequellae, if we still choose to use that term. I think it should be described as the case is syphilis, or not syphilis, in some stage of the infection. I do not recall having seen but one case of early syphilis in two years. Perhaps this is due to the fact that I do no genito-urinary work.

I believe every latent syphilitic is a danger to the household in which he lives. In the old latent cases I believe seminal transmission is the greatest danger. Many latent cases are congenital, and are innocent of their familial infection.

Congenital syphilis in the female and in the third generation has a tendency to run a mild course, sometimes without clinical signs or symptoms, and may not be recognized during life. The same thing is true of certain familial infections. One child may show positive evidence, another may be free or show a positive Wassermann; this may also be negative.

The fact that spirochetes do lie dormant in the heart, aorta, testes and other organs for many years, doing apparently little or no damage, or, giving rise to more marked symptoms, must be taken as proof that the organism is of low virulence. It is important to know if such spirochetes may not, even after years, become virulent and give rise to all the manifestations a virulent infection might give from the start. This applies to practically all other microorganisms and I believe applies to syphilis.

A man, age 76, came under my observation for treatment of what he called indigestion. A large mass was felt which seemed definitely connected with the liver. A diagnosis of gumma was made. Syphilis was admitted, the initial lesion having been forty-two years ago. Had received no treatment in forty years, according to his own statement. The mass rapidly disappeared under anti-syphilitic treatment. He stated that he was married ten years after his initial infection. His wife at the same time I saw him had a thoracic aneurism. The sons and daughters looked healthy, and all had reached adult life; none were examined by me, however. The hygienic importance of the spirochete carrier is just as great as of the tuberculosis carrier, and much more difficult to control. I believe every individual having had syphilis should be regarded as a spirochete carrier, and should be advised to take treatment over a period of many years.

The question of immunity or possibility of a new infection has received much consideration and many arguments pro and con have been advanced. Queyrant, Taylor, Lasch, Lee and Knowles claim, as a result of their investigations and experiments on man and animals, that patients are susceptible to another infection or second infection, especially during the first incubation period—that is, the time during the period between the first infection and the appearance of the chancre. Second inoculations have been successful shortly subsequent to the appearance of the primary sore, according to these gentlemen. Maurice, Quey-

rant, Linderman and Neisser claim to have made successful reinoculations twenty-four days after the appearance of the chancre. To refute this argument it was contended that trauma at the sight of inoculation might have favored the localization of a focus, as is seen in leg ulcers following injury. Non-specific material was used in some cases as a control, but no lesion followed their application.

Roulett makes the statement that he and his associates have tried a thousand times to reinoculate syphilitic subjects after the so-called secondary period, but never observed a single successful case. He states that the experiment is so harmless that it may be tried without hesitation.

Finger and Landstrum claim to have produced successful reinoculations, but say the lesions have a tendency to simulate the particular variety of lesion spontaneously manifest in the individual at the time of inoculation, and do not present the character of an original chancre.

Queyrant and Pinard succeeded in reinoculating a patient during the tertiary stage. The lesion was not that of a chancre, but an ulcer having the clinical manifestations of the late skin lesions. Reinoculations seem to be more readily accomplished during the later stages of the disease than during the earlier periods. This led the investigators to conclude that the immunity is not of the same high grade as that seen during the earlier periods.

Reinoculations seem to have been successfully made in animals, rabbits and monkeys having been used. In the case of the rabbit one testicle was inoculated, and subsequently the other; but the same testicle could not be reinoculated, showing that the immunity in rabbits is a local one.

In the case of monkeys, the experiments did not differ much from those seen in man. To summarize the results of reinoculation, they were so generally unsuccessful that they could hardly be used as an argument to show that patients were really cured and reinfected.

In going into this subject, I searched as carefully for evidence of a cure as I did for evidence of incurability. I found not a single instance of a case of known syphilis pronounced cured clinically that went to post-mortem and showed no evidence of the disease.

I believe we are justified in saying, as in tuberculosis, a case may be arrested, but are not justified in pronouncing any case cured, even though it may take away from the unfortunate individual the comfort in the thought that he is cured after many years of treatment. Syphilis may be clinically cured, serologically cured, but not pathologically cured.

WHAT THE PROFESSION CAN DO TOWARDS STIMULATING HEALTH WORK IN THE LAITY.

By Wm. Krauss, M. D.,
Memphis.

It seems to me that the title about covers the theme. Every doctor knows so well how he can instruct the public in health matters, that it seems much like carrying coals to Newcastle to present such a paper.

The physician who, without protest, sees his patients indulge in errors of omission or commission to the detriment of their health, can perhaps be excused on the ground of ethical delicacy, or possibly on the general idea that it has taken him so many years to acquire his knowledge that it seems hopeless to tell anything worth while in a short talk, and again, perhaps, because of the idea that the information which has not been asked for—in other words—fool's advice, is not welcome, and worth nothing.

Those who know nothing of professional ideals might go so far as to say that it is poor business to hawk health from the hustings and market places to people who will not even pay bills.

However, we can find a starting point in our discussion about as follows:

1. Clinical, laboratory, and other research has placed into our possession certain basic facts. There is enough information concerning the causes and mode of spread of diseases to enable us to present certain routine considerations that can be comprehended by the laity.

2. Let us put before the public the outstanding facts of disease transmission: (a) The source of most infectious diseases of man is man himself. (b) A few other infectious diseases are diseases of animals, occasionally transmitted to man, and (c) that small group

common to man and animal, to which tuberculosis belongs.

Let it be made clear that diseases of mankind do not originate in insect carriers or in objects that surround us, but must reach these in consequence of neglect or ignorance of certain important preventive measures that can only be applied by those at home.

This manner of opening the subject forces home the tremendous importance of considering Preventive Medicine as a sociologic problem. An intelligent audience cannot fail to feel the weight of the responsibility of the individual if it is told that each case of scarlet fever, measles, typhoid fever, syphilis, gonorrhoea, infantile paralysis, cerebrospinal fever, smallpox, chickenpox, mumps, diphtheria, leprosy, malarial and other fevers, especially pneumonia, has been contracted, directly or indirectly, from one who has preceded it and in turn will transmit it to others if preventive measures are not applied at the source. Here a point can be made of the necessity, nay, even the desirability of notification. Notification should bring a trained health officer and printed information of value at a time when it is thankfully received.

Such literature is too often, unfortunately, greatly involved and not presented in a practical manner. It should be arranged in a series of aphorisms and specific directions, easily comprehended, and, most important of all, easily carried out. It should be suggestive and convincing by its logic, rather than imperative and should be neither sensational, alarming nor offensive. It should appeal for close decisions to the attending physician. The doctor has a right, and it is his duty, to reign supreme in the sick room.

To give some concrete examples: The disinfecting officer who would attempt to scrub my enameled woodwork, because of a case of diphtheria, with German green soap, would have a row on his hands. I would also insist that any diphtheria germs which may by hook or by crook have reached the ceiling could be trusted to remain there even without fumigation. Such fussy directions breed contempt. (The room is never to be dusted or dry swept.) The cases of diphtheria that are contracted in any way other than contact infection are a negligible quantity.

It is an axiom in quarantine that to be suc-

cessful it must be a filter. The more nearly it approaches a barrier the less effective it becomes. The principle also applies to sickroom technique.

I am dwelling upon these points at length because it is in the sickroom where we must do most of our missionary work. The fact that man is the chief source of his own infections adds greatly to the difficulties of health work, difficulties for which we have but one remedy—education.

3. In our health talks we can generalize as to the modes of spread of disease. Right here we must bring all our guns to play upon obsolete conceptions of disease transmission. I would stress the point that the old terms contagious and infectious, no longer apply—that these terms had their usefulness in antibacteriologic days. With the testing out of an individual biologic character of bacteria, we find characteristic modes of spread accordingly. However, for practical purposes, some grouping is still in order, say under three general heads:

1. Direct.
2. Indirect
3. Through intermediary host.

In the great majority of cases the virus is transmitted more or less directly by what is known to health experts as contact infection. In many instances the virus is transferred indirectly through water, food, soil, air, etc. In a large group of diseases the transfer is, as you know, through an intermediary host. Here, again, I must insist that the agent of infection does not *per se* travel far, as a rule. The danger diminishes as the cube of the distance, except when favored by *human* agencies, *e. g.*, by trade and travel or when spread broadcast in water or milk supplies.

Contact infection does not necessarily imply transfer from person to person, but it assumes a transfer of quite fresh material. It involves, for the most part, diseases in which the virus leaves the body through the discharges from the nose, mouth and emunctories. In some diseases, like typhoid fever, the virus usually requires amplification outside of the body, which circumstance throws such infections into the second group, *i. e.*, indirect infection.

In indirect infection the role played by water, food, soil and air can be discussed. Flies

are discussed under food.

The Mills-Reinke phenomenon never fails to elicit interest. This phenomenon is that with the improvement of water supplies the mortality tables show reduction in the diseases not ordinarily classed as water-borne diseases—tuberculosis and diphtheria for example. Hazen has attempted to establish a ratio—the ratio has been all the way from 1:4 to 1:16.

Carriers and Missed Cases.—This is a prolific subject for discussion. Carriers are acute (convalescents), temporary (healthy persons temporarily transporting around diphtheria, etc.), and chronic (those who fail to rid themselves of infection for months or years (typhoid Mary).

Missed cases, of course, are such as are not ill enough to present diagnostic symptoms. Along these lines the public can be made to understand the otherwise inexplicable accidents of infection.

It would seem rather important to dilate upon carriers of infection in the respiratory passages. This would include common colds, influenza, diphtheria, measles, tuberculosis, scarlet fever, mumps, poliomyelitis and meningitis.

Pneumonia has been rather definitely divided into four types—two of which are due to cocci specifically of high virulence and differentiable biologically and which are not as ubiquitous as the mild lanceolate varieties. This rather definitely places pneumonia among the acute infectious diseases of high transmissibility and makes of it a notifiable disease requiring extreme care in the handling.

Intermediary host transmission is usually restricted to malaria lectures.

4. Occasionally audiences are assembled for the discussion of more specific subjects, such as child welfare, the venereal evil, tuberculosis industrial hygiene, accident and fire prevention, etc. At the present time there is much publicity work done along the line of cancer control. Just here the medical profession is in unfavorable light. If we tell people that 200,000 die of cancer annually and that the number is increasing, and that the only known preventive is publicity, so as to encourage early

removal, the public very well asks, "Why have you not told us these things long ago?" "Why are you not more active in cancer prevention?" "Why have you been telling us to let the blemishes, etc., alone?" or as the old-time plug hat doctor used to put it, "Never trouble trouble till trouble troubles you."

The national association for cancer control will forward literature and even speakers for large audiences, and this opportunity should be taken advantage of. The medical society should organize open meetings, either on regular or special nights. There should be several speakers, each to take an assigned subject. In the summer, infant feeding and milk control, typhoid fever and other problems in season, would make an interesting program. A good subject for discussion is disinfectants—their mode of action, the fallacy of trying to kill bacteria by odoriferous substances, the sewer gas fallacy. Municipal department of plumbing should here be invited, differential value of disinfectants, the necessity for prolonged contact, the bactericidal value of air and sunlight, etc.

Finally, the subject should always be presented along such lines as are suggested in this paper. In other words, it should be handled, not didactically but conversationally, appealing to the common sense, stressing the reasons for the conclusions arrived at, illustrating by concrete examples of how investigation has led to such knowledge and why the conclusion is logical, nay even irresistible. Simple examples can be made to illustrate how germ theory has become germ fact, mosquito theory mosquito fact. Something about reforms in medical education, hospital control, internal control and censure, elevation of standards, industrial insurance and its ultimate aims, needed reforms in eleemosynary institutes, the necessity for higher taxation to meet modern requirements of sanitation, care and control.

The society should be active in anti-tuberculosis work. Many laymen know much more than some doctors about the care of the tuberculous, modern methods of housing and administration, etc.

AS TO SERVICE IN M R C.

The following are extracts from a letter from the office of the Surgeon General of the United States Army to H. H. Shoulders, Lieutenant M. O. R. C., who is examiner at Nashville. They are self explanatory:

"Doctors who apply for commissions in the Medical Officers' Reserve Corps should not sever local connections at once, but should wait until notice is given.

"Appeals for active duty, accompanied by statements that officers have ceased all civil practice, have sold their homes and otherwise severed local connections, are continually reaching this office, leading us to the conclusion that some misunderstanding must exist as to the conditions under which appointments in the Medical Reserve Corps are accepted.

"You are requested to give the widest publicity to the fact that the acceptance of a commission in the Reserve Corps does not necessarily imply immediate assignment to active duty; that the Reserve Corps has been organized to meet the conditions that will arise when our troops are more extensively engaged, and that until that time officers should continue their usual duties pending notice that orders are to be issued.

"We have every reason to expect that the services of every available medical officer will be eventually required, but it is manifestly impossible to utilize the entire corps with the number of troops now serving.

"All officers of the Reserve Corps on the inactive list will be given at least fifteen days' notice when first assigned to active duty. Until they receive such notice they should continue their civil practice."

"By direction of the Surgeon General."

THE DOCTOR'S CONTRIBUTION.

In this world's war your service is absolutely essential.

The medical officer bears the same relative position in war as in peace, in that he is a conservator of health and life.

Through his skill, thousands of men receiving slight casualties are returned to the fighting force, thus conserving the physical strength of the army.

In base, field and evacuation hospitals doctors are as essential as in civil institutions, where the sick and injured are cared for.

As regimental surgeons and on transports and in the sanitary corps, must the Government have doctors if we are to terminate this war successfully.

Your contribution to your country at this critical time is YOUR SERVICE which you can give for the period of the war as an officer in the Medical Reserve Corps. That your country needs you is best answered in that she is calling you NOW.

The fighting forces are constantly expanding, and such expansion calls for additional doctors, and, even with the troops now in training and under mobilization (about two million), the Surgeon General has not enough doctors to fill the requirements.

Secure an application blank at once, fill it out and present it to your nearest examining board. Do not live to regret that you did not have a part in your country's great struggle for democracy, which means LIBERTY. —From the Laryngoscope for October.

INSOLUBILITY OF GELATIN CAPSULES.

F. W. Dersheimer, British Guiana (Journal A. M. A., Nov. 3, 1917), remarking on the task of making drugs palatable, thinks we may overdo the matter. Experiments seem to prove that soft gelatin capsules may protect the drugs not only from the action of the saliva but from the gastric and enteric juices. He has experimented with both hard and soft capsules in a pepsin solution slightly acidified with hydrochloric acid. The hard capsule completely dissolved in about twenty-one minutes, but the soft capsule showed no signs of dissolving after twenty-four hours. Recently the writer's attention was again called to the matter by a memorandum from the Walaya Health Board which reported that the soft gelatin capsules were not easily soluble and showed a decrease in their efficiency in the treatment of hookworm. He then repeated his experiments, which gave similar results and seemed to indicate that drugs should not be administered in soft gelatin capsules with any hope that they will act efficiently.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn.

NOVEMBER, 1917

EDITORIALS

TWENTY-FIVE PER CENT REJECTED.

Major Frank D. Smythe, M. O. R. C., Examining Officer at Memphis, has sent the Journal a statement showing the number of applicants examined for commissions in the Medical Reserve Corps, the number accepted and rank recommended for each accepted applicant, the number rejected and the reasons for rejection, where lack of physical fitness was the cause of rejection.

During the months from May to October, Major Smythe examined 209 applicants. Of these 120 were Tennessee doctors, 66 from the city of Memphis and 11 from Shelby County outside the city; 50 from Arkansas, 26 from Mississippi, 5 from Missouri, 4 from Kentucky, 2 from Alabama, 1 from Illinois, 1 from Texas.

The number of white physicians examined was 204, while 5 applicants were negroes, only one of whom was rejected.

Of those rejected on physical grounds, 42 in number, 22 were Tennesseans, making 18.3 per cent rejections for Tennessee. Arkansas, with 50 applicants, had 13 rejections on physical grounds, 26 per cent. Of the 26 applicants from Mississippi, 4 fell below the standard of physical requirement, 8 per cent. Two of the 5 Missouri applicants failed to pass physical examination, 40 per cent. All of the 4 Kentuckians were found physically acceptable, as were the 2 Alabamians and the Illinois applicant, while the single Texas representative was found unacceptable because of defective color perception. (Everything is red to these Texans.) The one colored physician rejected, a Tennessean, was turned down because of defective vision.

Only 12 rejections were based on other than physical grounds, which fact, we take it, speaks most eloquently for the high order of the ap-

plicants. Tennessee, we regret to say, had 5 per cent of her 120 applicants rejected on account of failings not physical in character, while Mississippi had 3.8 per cent so rejected and Arkansas just 1 per cent. Kentucky's 4 applicants all went through as in the physical, as did Alabama's two, while Illinois made a record of 100 per cent rejection when her single applicant failed to come up to requirements other than physical.

It is surprising that 42 of 209 physicians within the age limits for application for commissions in the reserve corps should be rejected on physical grounds with a competent, careful and reasonable examiner, such as Major Smythe is, in charge of the examinations. The fact that only 5.7 per cent of all applicants were rejected because of unfitness not related to physical condition emphasizes the other startling fact that 21 per cent of our best physicians are physically unfit, according to findings here referred to.

The causes for rejections where made because of bodily incapacities were as follows: Defective vision, 14; color blindness, 6; defective hearing, 1; bad teeth, 7; flat foot, 6; heart, 6; varicocele, 6; varicose veins of legs, 2; chronic appendicitis, 3; persistent albuminuria, 3; overweight, 3; underweight, 3; tuberculosis, 2; hernia, 1; chronic nephritis, 1; deformity, 1; tumor of cord, 1 (operated upon and accepted.) In some instances two or more of the above-named causes operated together to bring about rejection.

What of chronic appendicitis in four doctors out of forty-two rejected? What's the matter with our surgeons? What of seven of forty-two rejected with bad teeth and gums—most of them very bad? What's the matter with our dentists? And fourteen with defective vision, and six with cardiac derangement, in only two instances organic? If the Medical Reserve Corps is to have the desired numerical strength, it is going to be necessary for more of our really able-bodied physicians to apply for commissions and for those who are to some extent disabled by remedial defects to subject themselves to necessary reparative treatment. And certainly the figures and facts here presented as established by the work of Major Smythe should teach our physicians as a body that it is highly necessary to guard

zealously and persistently the health of their own bodies.

Of the 155 applicants accepted and recommended by Major Smythe for commissions, 12 were given rank of Captain or higher. Our information is to the effect that two of these are now Majors. This, as we understand, is a more liberal attitude than has been generally assumed by most examiners. As we have glanced down the list of names of applicants examined, however, we have been impressed with the truth of observations to the effect that medical officers are not given the rank that the character of the men who have gone into the Medical Reserve Corps deserves, and that the heavy responsibilities they must assume would justify. We find comfort in the thought, however, that by far the greater number of the applicants accepted by Maj. Smythe are of the kind that will win promotion.

And now! The call is still sounding. Tennessee's quota in the Medical Reserve Corps is not yet furnished. Still others must go, and those who can go should enter their applications at once. It is highly important that the Surgeon-General should be able to tell just how many physicians will be available for any and every emergency.

YOUR JOURNAL.

The Journal of the Tennessee State Medical Association belongs to the members of the association—not to any one man, nor to any small set of men. It is intended to serve the interests of the association, to reflect the opinions of its members, to stimulate the writing of scientific papers and others bearing upon the welfare of organized medicine and upon the public welfare as it may be affected through the service of the medical profession in the state. Its columns are open to any man in the Tennessee State Medical Association, and to any reputable physician or citizen anywhere who may have something to say which is suitable for publication in a medical journal of its class. Of course, whatever is offered for publication is subject to the scrutiny and to the approval of the editor. But even his word is not final, not at all. He is subject to the direction of the Trustees of the Journal, and they to the House of Delegates, which, in turn, must bow to the will of the Association in convention assembled. The Journal is *your* Journal.

The editor of the Journal has received a great many kind messages and personally spoken words of encouragement, which have swelled his heart with gratitude toward those from whom they came. He has also had the benefit of constructive criticism which, while it was not calculated to increase his good opinion of his own importance nor of his ability, was offered in a helpful and kindly spirit and was appreciated and nearly always acted upon. He has also been scored with withering sarcasm and blistering invective, which same he has learned to digest and absorb and excrete without the slightest disturbance of any function. Letters come in abundance to the editor which refer to "your Journal" and he deplores—almost resents—this expression of the conception of what the Journal really is meant to be. A great many complimentary expressions are received in which the excellence of the Journal is spoken of and the editor commended—and these always make a fellow feel good, for a little while, any way.

And now, with an apology for the seemingly dominant personal note which is here sounded, with sincere gratitude for all kindly words of encouragement and criticism and compliment, and with an invitation to the "sharpshooters" to continue their bombardment until their ammunition is exhausted, we want to tell you some things about your Journal as we see them.

The Journal is no better than it was four years ago. We hope it is no worse. And it is not going to be any better until the members of the Association who can really contribute to its improvement will furnish the necessary material. If we except those who have participated in the programs of medical meetings, there are not more than ten men in the Association who have contributed one scratch nor given the slightest lift of any sort to help make the Journal a better product. And even some of those who read papers at our annual meetings never hand these papers in to the Journal, notwithstanding the fact that they are read with the express understanding that they shall become the property of the Association and shall be published in the Journal. Quite a number of the papers read at the Nashville meeting, seven months ago, have never been sent to the Journal.

If promises could make a medical journal, the Journal of the Tennessee State Medical Association would make all other medical periodicals insignificant, in point of bulk, at least. There is one member of the Association, an able and widely-known man, who has two very splendid papers read by him before medical societies. His office is less than two hundred yards from the Journal office. He has promised one of these papers, either of which would be a distinct contribution, to the editor just exactly fourteen different times. Just thirteen times the editor has very courteously reminded him of his prevarications, which he has just as courteously admitted each time and then lied again. There are lots more just like him, who have made repated promises to send in contributions which we know would help to make a better Journal, and who, like him, have yet to deliver the goods. We haven't told all of them that they, too, are prevaricators, but, as Sandy would say, "We have an opeenion."

A great many of our best men do a deal of writing. Some of them feel that they must have their productions printed in some big journal. Some of them write papers and hold them to read at meetings of several different societies and then, after everybody who reads the Journal has heard these papers read at least once, send them in with a request—sometimes a demand—that they be published immediately. There are some others who send their writings to other journals, and after their publication send them to their own Journal with directions to print. Three times within three years members of the Tennessee State Medical Association have sent *reprints* of their papers from other medical journals to their own Journal with request for immediate publication, which requests, permit us to say, were quietly ignored. If our good men will send their writings to their own Journal first hand, we'll have a better and better Journal.

An earnest effort has been made by the editor to secure more representative scientific papers from men in all parts of the state. We have begged for instructive case reports—and if we had in hand all that have been promised there would be the finest of material for making the Journal very helpful to its readers for months to come. We have tried to "start something" once in a while by editorial comment which invited almost anything from a

row to a revival. But we are nearly ready to conclude that the members generally of the Association are uncommunicative, if not indifferent to the possible improvement of the Journal.

There has been a large amount of most excellent material contributed by members of the Association, much of which has been abstracted by other medical publications, and much of which has attracted wide attention, as is shown by the number of requests that have come for copies of the Journal, in which reference is made to specific articles. Right now, however, there is not enough material on hand to complete the current volume. This Association has within its membership the talent capable of producing a better Journal, and we will have just that thing when the members of the Association will give more help in making it.

It's *your* Journal.

COUNTY OFFICERS AND MEMBERS.

The time for the annual election of officers of our county societies is near at hand. At least one county organization has already chosen its officers for the coming year, and others will take like action before the next Journal is out. Secretaries of County Societies will confer a great favor if they will send to the Secretary of the Association lists of the names of all officers elected, including names of delegates and alternates.

This next coming year is going to be the crucial year in the history of organized medicine in this state. Our Association has grown in numbers and in strength until it is now representative, in many respects, of the true medical profession in Tennessee. This growth has taken place after the expenditure of great effort upon the part of devoted men—county secretaries, councilors, local presidents, loyal members and ex-officers of the Association. It will never do for any part of the advantage gained to be lost. One way by which the holding of the ground that has been gained can be assured is through the careful selection of officers to direct the work of our county societies. These men should be chosen with care and with consideration for the possible strengthening of the societies. They should not be nominated on impulse and elected simply because nominated.

The demands of the Medical Service of the United States Army will sadly deplete the membership of some of our county societies, and this, of course, will have its immediate effect upon the membership of the State Association unless some provision is made for retaining the names of all who are called into army service on the active membership roll. A supreme effort should be made to secure every eligible man in every county as an active member in the local society. The name of every man on the 1917 roll must be retained for 1918. This will necessitate the payment, by the societies, or otherwise, of the annual dues of members gone into the army or navy if the funds of the State Association are to be kept adequate in amount.

All 1918 dues will be payable on January 1, 1918. The year 1917 ends on December 31, just as the calendar indicates. While membership does not lapse until April 1, 1918, there is no real reason why every 1917 member should not have his dues paid and his name reported to the Secretary of the Association before the month of January is gone. Let's try to establish a new record in this respect in 1918.

And the new ones—those who are out but who should be in—let's get 'em and have their names on the roll, every one, along with the names of all present members before February.

It can be done. Let's do it.

COLLEGE OF MEDICINE, U. OF T.

The College of Medicine of the University of Tennessee opened its sixty-seventh session on September 22, with an attendance of eighty-three students.

Our faculty and sub-faculty have temporarily given up thirty-eight of their members for national service with the colors.

The entrance requirements for the College of Medicine have been increased to two years of college work in the sciences to begin January 1, 1918.

A new full-time chair has been established for hygiene and sanitation, but owing to the present scarcity of men in all lines of medical activities, it has not been possible yet to fill it. This work is under the guidance of Professor William Krauss, who has been recently appointed, with Drs. C. G. Bass of New Orleans, C. F. Craig of the United States Army

and W. H. Deaderick of Hot Springs, to the Research Committee of the National Committee on Malaria.

The methods of clinical instruction have been largely expanded. In the division of medicine, the work has been newly organized and coordinated. The chief of the division supervises the teaching in the out-patient department. He selects teaching cases among the patients and distributes them to the various clinics. At the week-end, he meets with the staff of the out-patient department and the entire class for a seminary conference. Once a week the entire staff meets at the General Hospital for a ward round conference, or in the pathological laboratory, where the study of some cases is brought to a conclusion by a general survey of the cases and a discussion of the specimens secured by autopsy.

All senior work is given in the General Hospital, where the class is occupied in sections during the entire day, and where part of the class has permanent quarters. The responsibilities of the former clinical clerks have been expanded into those of junior internes. Their service rotates through the various wards. Under proper guidance, they write the case histories which become permanent records of the hospital. They are responsible for a certain number of patients assigned them and give anaesthetics and assist at operations.

The College of Dentistry has increased its curriculum from a three to a four-year course this year, and under these circumstances has only a small attendance in its freshman class.

The School of Pharmacy has opened its sixteenth session.

A. H. WITTENBORG, Dean.

CHEAPER ANTITOXINS AND VACCINES.

About eight months ago the Secretary of the Tennessee State Board of Health entered into a contract with E. R. Squibb & Sons whereby the people of the state will be able to secure diphtheria and tetanus antitoxins and typhoid and smallpox vaccines at prices far below those at which these products have been heretofore sold. Within the last few weeks a representative of Squibb's has been in the state establishing distributing agencies. Under the terms of the agreement between the State Board of Health and Squibb & Sons, a supply of the antitoxins and vaccines is to be kept in all towns

having a population of 500 or over. If no agency has been established in your town, write to E. R. Squibb & Sons, New Brunswick, N. J., and ask that arrangements be completed with some local druggist.

The prices at which the different sized packages of diphtheria antitoxin will be sold are: 1000 units, 48c; 3000 units, \$1.32; 5000 units, \$1.88; 10,000 units, \$3.60. Tetanus antitoxin will be sold at the following prices: 1500 units, \$1.67; 3000 units, \$2.87; 5000 units, \$4.00. One immunization treatment of anti-typhoid vaccine in syringes will cost 80c, while in ampoules the cost will be 28c. Smallpox vaccine points or tubes will cost 8c each in packages of ten.

A comparison of these prices with those which have obtained throughout the state will show that the State Board of Health has done a splendid service for the people in making it possible for them to secure antitoxins and vaccines at reasonable figures. The work of the establishment of distributing agencies throughout the state should be completed in a short time, and then these most valuable curative and preventive agents will be well within the reach of practically all citizens of Tennessee.

ALL HONOR TO MEMPHIS.

The Memphis and Shelby County Medical Society is the largest county medical society in Tennessee, and, certainly, one of the largest in the South. There are at present 223 names on the roll. It is an active society—active in that well-attended meetings are held regularly, well-prepared scientific papers and reports are presented, and in that the discussions of these papers and reports are freely participated in by the members generally. In addition to all this, which is primarily for the benefit of the members themselves, the Memphis and Shelby County Medical Society is active and earnest in its service for Memphis and for Shelby County and for Tennessee. Wherever and whenever opportunity offers, the doctors composing this organization get on the job through their representative committees—and they do things that help.

But it is not for any of this that the Journal now wants to commend the physicians of Memphis and Shelby County, but rather for the reason that they have responded *as none anywhere have done* to the call of their country to

help win the war in which the United States is engaged. *No other city in the land has sent as many doctors to the ranks of the Medical Reserve Corps in proportion to the number resident as has MEMPHIS.*

And Shelby County outside of Memphis has responded well, too.

All honor to Memphis!

REPORTED DURING OCTOBER.

The following names have been reported by County Secretaries for enrollment as members of the Tennessee State Medical Association during the month of October: Drs. T. B. Yancy, Kingsport; S. E. Reynolds, Elizabethton; Everett Lavern, Polk; P. J. Frentzseh, Rives; G. W. Booker, W. Church St., B. V. Howard, W. Church St., J. H. Kincaid, 421 W. Church St., Hugh W. Allan, N. Broad St., and C. H. Daves, Walnut St., Knoxville; G. W. Musgrave, Moscow; G. G. Cannon, Cumberland Furnace; P. T. Magan, Lillian Magan, Los Angeles, Cal.

There were 1,570 names enrolled up to November 1, 1917, as compared with 1,586 on the same date in 1916. This looks bad. Let's get em in.

WAR PRICES.

There are very few commodities that can be purchased at prices prevailing thirty years or more ago. One notable exception is the price of a doctor's visit or office prescription. Thirty years ago all a patient received for the price of a visit was a look at the tongue, a pulse count and thermometer reading. Doctors boasted of making thirty or more visits a day in private residences, with no better transportation than horse and buggy. Recalling some specific instances, there were four doctors occupying five rooms over a drug store. The furniture consisted of a wooden operating table, a washstand with bowl and pitcher, desk, chairs, bookcase and a satchel containing rusty instruments. The rent paid was \$4.00 per month per room, and the attendant was a little negro boy who had to "tend" the horse when the doctor was "in." Today, with the price of every commodity almost prohibitive, with the necessity of owning an automobile, office expense up to a hundred times as much as thirty years ago, and equipped with microscope, sphygmomanometer and other diagnostic apparatus, the doctor gets just as much for

an office consultation and visit as the grand-father received in the "good old days." To-day he makes a painstaking examination, enters an elaborate record on his files, refers half of his cases to a specialist, puts in half a day at a clinic, dispensary or social service headquarters, delivers health lectures, volunteers to perform every possible service at the expense of time and money, and at night goes back to his office to figure out where he can collect enough money to buy a drink of gasoline for his dilapidated Lizzie.

It is an indisputable and undisputed fact that the average net income of the doctor is less than \$1,000 a year. In some large cities it is less than half as much.

Is it not about time for thinking medical men to study out some revision of medical economies? There has been a great deal of agitation about compulsory industrial insurance. Much of this agitation emanates from interests that would still more enslave the rank and file of the medical profession.

Added to all this is the obligation of the stay-at-home doctor to the volunteer in the reserve corps. Many physicians have gone forward, leaving dependents behind them. In the most distressing cases, young doctors, subject to draft, have left families and instalment obligations behind, compelling their wives to seek employment in order to piece out their meagre subsistence.

The writer would like to see a movement started for the betterment of these things. Suppose County Medical Societies adopted resolutions establishing better living prices for the work of the rank and file of the medical profession. Let the preamble embody in modest but dignified terms the reasons for the advanced schedule, and let the increase go into a fund for indigent families of medical reserve officers. After the war any revision of the economies of medicine can take care of itself.

K.

PHYSICIANS' LEASES.

The following letter from R. R. Denny, Chairman of the Physicians' Lease Committee of the Chicago Rotary Club, is self-explanatory and is printed here at the request of this committee, which has done a very great amount of work in an effort to secure relief for physicians who have been called into war service,

and who are burdened with expensive office leases:

Chicago, Oct. 17, 1917.

Journal of the Tennessee State Medical Association, Nashville, Tenn.

Gentlemen: The Physicians' Lease Committee of the Chicago Rotary Club has written a great many letters and we have brought relief to a great many doctors because of the wonderful co-operation we have had from the Medical Journals. The publicity obtained has been far reaching and has influenced legislation in that direction.

We suggest that your publication call the attention of your subscribers to Senate Bill No. 2859, entered by Senator Chamberlain. The purpose of this bill is to protect the civil rights of soldiers and sailors during the period of the war. The bill practically declares a moratorium on leases, mortgages and life insurance policies while in the United States service, during the present war. We suggest, therefore, that you have your subscribers send for a copy of the bill and get behind their congressmen and senators for the purpose of having this bill or a similar bill passed through the next session of Congress.

Thanking you for such notices and publicity as you may give this matter, I wish to remain,

Yours very truly,

R. R. DENNY,

Chairman of the Physicians' Lease Committee,
Chicago Rotary Club.

TENNESSEE HOSPITAL UNITS.

The Vanderbilt Hospital Unit, from Nashville, and the Memphis Hospital Unit, from Memphis, were ordered on November 6 to mobilize and await moving orders. The men of these two units are now at Ft. McPherson, Atlanta, where they will undergo a period of training. The nurses were all ordered to Ellis Island. It is thought that service abroad will soon be entered upon by the two Tennessee Hospital Units and thus are temporarily withdrawn from the medical life of the state twenty of our most proficient physicians and forty of the best trained nurses.

Major Richard A. Barr is Director of the Vanderbilt Unit and other physicians in the organization are Major W. H. Witt, Capt.

A. W. Harris, Capt. H. M. Tigert, Capt. W. C. Dixon, Capt. W. M. McCabe, Lieut. Owsley Manier, Lieut. W. G. Kennon, Lieut. J. M. Lee, Lieut. E. M. Fuqua, Lieut. T. D. McKinney, Lieut. Robt. R. Brown. Miss Sinnott, for so long at the head of the trained nurses at St. Thomas Hospital, is Head Nurse.

Major Battle Malone is Director of the Memphis Hospital Unit and with him are associated Capt. J. L. McGehee, Capt. W. T. Swink, Lieut. A. T. Cooper, Lieut. S. E. Frierson, Lieut. J. J. Hobson, Lieut. E. L. Anderson, Lieut. T. N. Coppedge, Lieut. S. N. Brinson, Lieut. K. M. Buck, Lieut. Robin Mason. Miss Myrtle Areher, who has been in charge of the Nurses at the Baptist Hospital will be Head Nurse.

The best that is in Tennessee Medicine is represented in the personnel of these two organizations. The good wishes of the state of Tennessee will go with them wherever they may be called upon to go, and the prayers of their host of friends will be offered up for them that they may be kept strong for service and brought back in safety to their homes.

HERE'S THE ANSWER.

Columbus, O., Oct. 27, 1917.

Dr. Olin West, Nashville, Tenn.

My dear Doctor:

I was interested in the article on page 256 of your October Journal concerning the R. Van Walden Institute of Cincinnati.

In Ohio we have been after Mr. Van Walden for some years. We lauded him a year ago but he escaped through a suspended sentence on a promise to absolutely abandon the field of medical quackery. I am glad to advise you that he is today in the county jail at Portsmouth, Ohio, serving that suspended sentence. It is probable that he will give the sick people of Tennessee no further trouble.

Yours very sincerely,

(Signed) G. V. SHERIDAN,

Executive Secretary.

PRESIDENT STATE BOARD OF HEALTH.

Dr. E. M. Sanders, Nashville, was appointed by Gov. Rye a member of the Tennessee State Board of Health on October 27, and at the annual meeting of the Board on November 6, was made President. Dr. Sanders

succeeds, Dr. R. E. Fort, Nashville, who has served on the Board of Health for a long term of years and who was President of the Board from 1912 until his recent retirement.

Dr. Sanders is a surgeon of prominence in Nashville and has a wide acquaintance throughout the state. His many friends in the medical profession will be glad to learn of the new honor conferred upon him, and he is to be congratulated upon having been put into this position which offers such large opportunity for real public service.

IN THE RESERVE CORPS.

The following named Tennessee physicians have been recommended for commissions in the Medical Reserve Corps since the last appearance of the Journal and up to October 12th:

Elisha Farrow, Bell's, First Lieutenant.

John Everett Giler, R. F. D., No. 1, Jellico, First Lieutenant.

Sidney Saurin Evans, Memphis, 1st Lieutenant.

Vernon King Earthman, Murfreesboro, Major.

Charles Samuel Morrow, Nashville, First Lieutenant.

Emmett Paul Byrd, National Soldiers' Home, First Lieutenant.

William Edgar McGaha, Newport, First Lieutenant.

Samuel Newton Anderson, South Pittsburgh, First Lieutenant.

Ira Osear Park, Union City, First Lieutenant.

William Porter Law, Westmoreland, First Lieutenant.

TENNESSEE EXAMINERS.

Dr. Frank D. Smythe, Memphis, Major M. O. R. C., office in Central Bank Building; Dr. W. D. Haggard, Nashville, Major M. O. R. C., office in Doctors Building; Dr. Reese Patterson, Knoxville, Lieutenant M. O. R. C., office West Church Street; Dr. H. H. Shoulders, Nashville, Lieutenant M. O. R. C., office in Doctors Building.

Applicants for commissions in the Medical Reserve Corps may present themselves for examination to any of the above-named officers, from whom any information relative to the steps necessary to enlistment may be had.

SOCIETY PROCEEDINGS

HENDERSON COUNTY.

The Henderson County Medical Society met at Lexington on October 9, 1917, with Drs. A. L. Waller, E. E. Waller, D. W. Bradfield, C. E. Bolen, M. P. Boyd, J. P. Joyce, R. H. Davidson, J. F. Goff, W. F. Huntsman, J. M. Arnold, W. T. Watson, G. A. Brandon, C. H. Johnston and S. T. Parker present. Dr. M. P. Boyd was in the chair.

Officers for the ensuing year were elected as follows: President, Dr. A. L. Waller, Juno; First Vice President, Dr. J. F. Goff, Chesterfield; Second Vice President, Dr. D. W. Bradfield, Safford; Secretary-Treasurer, Dr. S. T. Parker, Lexington; Delegate to State Association, Dr. C. E. Bolen, Wildersville.

A fee bill fixing charges for services by the members of the society was adopted and resolutions upon the removal of Dr. W. B. Keeton, long an active member, from Henderson County, were adopted.

The Henderson County Medical Society is one of the strong units of the State Association, always reported on time, always well represented at the annual meetings of the Association, and always active in behalf of the public welfare and of organized medicine.

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Dr. Larkin Smith, Major M. O. R. C., is Surgeon of the 114th Artillery now at Camp Sevier, Greenville, S. C.

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Dr. J. T. Barbec, Jackson, Captain M. O. R. C., is serving with Sanitary Detachment No. 43, 38th Regiment of Infantry, and is now at Syracuse, N. Y.

* * *

Dr. J. H. Marable, Cowan, Captain M. O. R. C., is now at Camp Greenleaf, the medical training camp at Ft. Oglethorpe.

* * *

Dr. A. F. Coper, Memphis, Captain M. O. R. C., is at Camp Greenleaf, Ft. Oglethorpe, Ga.

* * *

Dr. A. S. Dabney, Nashville, has been promoted and is now Captain and in charge at present, of the 120th Ambulance Company at Camp Sevier.

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Dr. T. H. Ingram, Memphis, Lieutenant M. O. R. C., is at Camp Greenleaf, Ft. Oglethorpe.

* * *

Dr. J. J. Hobson, Memphis, Lieutenant M. O. R. C., has been in the training camp for medical officers at Ft. Oglethorpe. Dr. Hobson is one of the officers of the Memphis Hospital Unit.

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Dr. M. L. Shelby, Lieutenant M. O. R. C., has been at the Army Medical School, Washington, for a course of instruction.

* * *

The number of physicians who had accepted commissions in the Medical Reserve Corps up to October 15, is approximately 13,500.

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Dr. T. B. Givan, Nashville, Lieutenant M. O. R. C., is with the 50th Infantry at Syracuse, N. Y.

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Dr. Thos. R. Barry, Gallatin, Lieutenant M. O. R. C., is attached to Ambulance Company No. 307, Yaphank, Long Island.

* * *

Dr. C. D. Walton, Gordonsburg, is at Camp Greenleaf, Ft. Oglethorpe, as a Lieutenant in the Medical Reserve Corps.

* * *

Dr. J. C. Fly, Lyle, Lieutenant M. O. R. C., is stationed at Camp Meade, Md.

NOTES AND COMMENT

Dr. B. F. Hambleton, Professor of Physiology, is now Dean of the Vanderbilt School of Medicine, having succeeded Dr. L. E. Burch, now on duty as Major in the National Reserve Corps.

* * *

Dr. Hugh Morgan, Nashville, is now serving in U. S. Base Hospital No. 2, American Expeditionary Force, in France.

* * *

Dr. R. W. Billington, Nashville, Lieutenant M. O. R. C., is at work as a member of the Orthopedic Hospital Unit under Major J. E. Goldthwait at Aberdeen, Scotland.

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Dr. Miles W. Barnes, Cedar Hill, Lieutenant M. O. R. C., is on duty " Somewhere in France."

* * *

Dr. A. B. Ross, Clarksville, Lieutenant M. O. R. C., is at Camp Greenleaf, Ft. Oglethorpe.

Dr. Wm. E. Howell, Morrystown, Captain M. O. R. C., has been ordered to report at the camp located at Little Rock, Ark.

* * *

Dr. S. S. Duggan, Eagleville, Lieutenant M. O. R. C., is at the training camp for medical officers at Ft. Oglethorpe.

* * *

Dr. W. G. Somerville, Memphis, Captain M. O. R. C., is on duty in the Provisional Base Hospital, Ft. Oglethorpe, Ga.

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Dr. G. E. Wilson, Candiff, Lieutenant M. O. R. C., is at Camp Greenleaf, Ft. Oglethorpe, Ga.

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Dr. S. W. Williams, Gassaway, Lieutenant M. O. R. C., is on duty at the Aviation School, Fort Worth, Tex.

* * *

Dr. A. R. Porter, Jr., Memphis, is on duty at Camp Greenleaf, Ft. Oglethorpe, Ga., as Lieutenant in the Medical Reserve Corps.

* * *

Dr. E. E. Brown, Nashville, Lieutenant M. O. R. C., is at Camp Greenleaf.

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Dr. C. A. Frazier, Knoxville, Lieutenant M. O. R. C., is in the training camp for medical officers at Ft. Oglethorpe.

* * *

Dr. Chas H. Davis, Knoxville, Lieutenant M. O. R. C., is on duty at Camp Taylor, Louisville, Ky.

* * *

Dr. James Brew, Nashville, Captain M. O. R. C., is at Camp Greenleaf, Ft. Oglethorpe, Ga.

* * *

Dr. T. B. Collins, Trezevant, Lieutenant in the Medical Reserve Corps, was ordered to Ft. Thomas, Ky., in October.

* * *

Dr. G. A. Hatcher, Nashville, Assistant Superintendent of Central Hospital, has been ordered to Camp Greenleaf, Ft. Oglethorpe, Ga., for a course of instruction as an officer in the Medical Reserve Corps.

* * *

Dr. M. L. Connell, Nashville, Lieutenant M. O. R. C., has been ordered to Ft. Oglethorpe.

* * *

Dr. J. P. Delabet, Arrington, Lieutenant M. O. R. C., is at Camp Wheeler, Macon, Ga.

Dr. T. B. Collins, Trezevant, Lieutenant in C., is in the training camp for medical officers at Ft. Oglethorpe.

* * *

No more commissions are to be issued in any branch of the military service until the completion of a thorough check of the number of officers in the reserve. Your commission may, therefore, be delayed for a little while.

* * *

Dr. L. E. Bureh, Nashville, Major M. O. R. C., has been ordered to Camp McClellan, Anniston, Ala., for duty in charge of the division of brain surgery.

* * *

Dr. A. L. Lear, Lieutenant M. O. R. C., has been assigned for temporary duty at Camp Meade, Annapolis Junction, Md.

* * *

Dr. Cleveland Payne, Oakland, Lieutenant M. O. R. C., is on duty at Camp Vail, Little Silver, N. J.

* * *

Dr. B. C. McMahon, Memphis, Captain M. O. R. C., is at Ft. Oglethorpe.

* * *

Dr. G. R. MeSwain, Paris, Lieutenant M. O. R. C., is on duty at Newport News, Va.

* * *

Dr. R. B. Griffin, Ridgely, Lieutenant M. O. R. C., has been ordered to report for duty at Camp Wheeler, Macon, Ga., after having completed a course of training at Camp Greenleaf.

* * *

Dr. W. H. Smith, Brunswick, Captain M. O. R. C., is at the University of Pennsylvania under orders for instruction in military brain surgery.

* * *

Dr. S. B. Duggan, Eagleville, Lieutenant M. O. R. C., has been honorably discharged on account of being physically incapacitated for active service.

* * *

Dr. W. C. Colbert, Memphis, Lieutenant M. O. R. C., is at Camp Greenleaf, Ft. Oglethorpe, Ga.

* * *

Dr. D. T. Austin, Bogota, Lieutenant M. O. R. C., has been ordered to report at Camp Hancock, Augusta, Ga., for duty. Lieut. Austin has been at Ft. Oglethorpe.

Dr. Chas. Hendley, Cottage Grove, Lieutenant M. O. R. C., has been ordered to San Antonio, Tex., for duty at Kelly Field, an aviation training camp.

* * *

Dr. T. M. Harper, Medina, formerly of Dickson, Lieutenant M. O. R. C., has been assigned to duty at Camp McClellan, Anniston, Ala.

* * *

Capt. Otey J. Porter, Columbia, Lieut. L. D'L. Cotton, Alexandria, Lieut. G. C. Anderson, Eads., Lieut. J. G. Seay, Germantown, Lieut. W. G. Saunders, Jackson, and Lieut. F. W. Lee, Springfield, are Tennessee doctors in the Medical Reserve Corps who were ordered to Camp Dix, Wrightstown, N. J., in October.

* * *

Dr. Reese Patterson, First Lieut., M. O. R. C., Knoxville, Tenn., has been made examiner for the Knoxville boys.

* * *

Lieut. G. L. Brown, Memphis, has been assigned to duty at Camp Cady, Deming, New Mexico, after a course at Rockefeller Institute.

* * *

Lieut. L. L. Keller, Memphis, and Lieut. Jno. H. Morris have been ordered to Camp Meade, Annapolis Junction, Md.

* * *

W. H. Ballard, Laconia, Lieut. C. W. Brown, Nashville, Lieut. W. R. Booker, Bristol, and Lieut. W. D. Cagle, Labelville, are Tennessee members of the Medical Reserve Corps now on duty at Camp Lee, Petersburg, Va.

* * *

Lieut. F. M. Boyatt, Oneida, Lieut. D. A. Walker, Friendship, Lieut. W. C. Sain, Bolivar, and Lieut. T. H. Ingram, Memphis, have been assigned to duty at Camp Pike, Little Rock, Ark.

* * *

Lieut. G. A. Hatcher, M. O. R. C., Nashville, is a Phipps Clinic, Baltimore, for a special course in psychiatry.

* * *

Lieut. H. E. Hall, Ppison, and Lieut. E. G. Maxwell, Darden, are now on duty at Camp Upton, Yaphank, Long Island.

VANDERBILT SCHOOL OF MEDICINE HAS A FINE OPENING.

The School of Medicine of Vanderbilt University opened October 1st with a total enrollment of 115 students. There are forty-one freshmen, twenty-four sophomores, twenty-three juniors and four irregulars. This enrollment, especially of the freshmen class, is beyond expectations, Considering war times.

Dr. Carey E. Morgan, pastor of the Vine-street Christian Church, offered the invocation and made an inspiring talk, inviting the students to the churches of Nashville.

Chancellor Kirkland made the welcoming address in which he said that the University would tolerate no slackers and that the place for all such was in the trenches. He said that the importance of medical work was demonstrated when the government singled out medical students to remain at their studies, even if they were drafted. He also said that the man who remained at school was in national service as much as those drafted.

Dr. B. F. Hambleton, the new acting Dean, who takes the place of Dr. Lucius E. Burch, who is doing government work on brain surgery, outlined the schedule for the coming year and said there would be few changes and no let-up. He will continue his work as Professor of Physiology.

An eight months' service at the City Hospital, which has a capacity of one hundred and eighty-five beds, and also at the Vanderbilt Hospital will insure ample clinical facilities to the students of medicine.

The students seem to realize the need of their trained services in this great war, and are putting forth every effort to make the most of the opportunities offered to them. Many have already made application for enlistment in the Enlisted Medical Reserve Corps, and expect to enter active service in the Army as soon as their medical education is completed.

MISCELLANEOUS

THE FULL SACRIFICE.

Our country is at war. Men are called according to their talents and training to enter the different branches of the service. Physicians always have a special place, and those of special training are even more fortunate. No choice has been left to youth, because its strength and enthusiasm are asked for by law. Men of mature age have the glory of choice. They choose to serve or let others serve. For the moment the enemy is at a distance, and those without imagination see him always there. The lack of a disaster within our gates makes us feel secure. Many, therefore, are putting off the day of service. Many hesitate and question; some even bargain.

To relinquish liberty causes not a few to shrink back. Yet those who have taken themselves apart and made the decision and are now doing the duties assigned to them as well as they may, cherish, as dearly as the heart can, the liberty to be with wife and family, to continue to engage in private or public medicine, to carry on their investigations, to teach in hospital or medical school, and to provide for their old age. The right to these blessings of peace belongs to no man. Some there are, however, who, by actions or words, seem to claim a right to these blessings over their brothers.

No work is too small in a cause nearly sa-whoever is above the work that naturally falls to him, and works, if at all, only with reservations, misses the finest inspiration that duty fully done can supply. He who consciously or unconsciously allows self to decide in this matter is to be pitied. The spirit of service, which, if allowed, would almost transfigure him, he has failed to grasp. Greater peace can no man have than he who has made the full sacrifice.—From the *Laryngoscope* for October.

MEDICAL RESERVE OFFICERS AND ORDERS TO ACTIVE DUTY.

“How soon shall I be called on to report for active duty?” This question and the uncertainty of its answer has been probably the most trying experience of the civilian physi-

cian who has accepted a commission in the began on the day on which the commission was accepted, because on that day the newly made medical officer realized that he had become subject to call, and must be ready to weeks of the war when medical reserve officers were ordered out on very short notice, often giving them only one or two days in which to close up their personal affairs, even gave up their offices, practically closed their business, or made arrangements which they would not have made had they not presumed that they would be ordered out very shortly. These emergency conditions have now passed. No such uncertainty rests on the man who accepts a commission today, for the Surgeon-General's office has announced that members of the Medical Reserve Corps will be given at least fifteen days' notice before being ordered into active duty. It is quite possible that even more than fifteen days will be given those who require more time in which to arrange their affairs.—*Journal American Medical Association*, Nov. 3, 1917.

A FEW FACTS ABOUT THE MEDICAL OFFICERS' RESERVE CORPS.

The War Department at first estimated that 20,000 doctors would take care of the medical needs of the First Army. It is now estimated that 22,000 will be needed. Only about 13,500 doctors had applied, been commissioned and accepted their commissions up to October 15th. Many more than this number had applied and been recommended for commissions, but had not to that date accepted their commissions.

A doctor is not subject to call until he has accepted his commission.

Tennessee's quota on the basis of 20,000 is 484. Only 307 doctors had applied and been recommended for commissions up to October 15th. A number of these have not yet accepted their commissions.

On the basis of 22,000 Tennessee's quota is raised to about 532.

It is readily seen that the doctors of Tennessee have so far done far less than the War Department expects.

According to information from the War Department, Tennessee stands 46 in the per-

centage of enlistment in the Medical Officers' Reserve Corps. Only three States have furnished a smaller percentage of their doctors for service.

Tennessee has 3,457 doctors; 8.6 per cent. had been recommended for commissions up to October 1st. Approximately 15.3 per cent. of all doctors will be required to make up Tennessee's quota of 532.

There are probably 1,500 active doctors tributing to the Red Cross. In the purchase nessee. More than one out of every three will, therefore, be required to make up the quota.

The matter of drafting doctors is not contemplated. To them has been left the glory of choosing as to whether they will serve or not serve.

Tennessee has furnished her quota of men. She has done her part in the matter of contributing to the Red Cross. In the purchase of Liberty bonds and in every other line of voluntary service the people have been called upon to perform, except in this one particular.

These are the facts as regards the need for doctors. These are the facts as regards the number that have placed themselves at the service of their country.

The call has come; it is continuing to come; it will not cease to come, of course, until the medical needs of the army are met. The appeal is, "Join Now."

If you desire further information as regards the Medical Officers' Reserve Corps, you will apply to the following officers

Frank D. Smythe, Major M. O. R. C., Memphis, Tenn.

W. D. Haggard, Major M. O. R. C., 321 Doctors' Building, Nashville, Tenn.

H. H. Shoulders, Lieut., M. O. R. C., Nashville, Tenn.

Reese Patterson, Lieut., M. O. R. C., Knoxville.

CHRONIC CONSTIPATION.

A. B. Graham, Indianapolis (Journal A. M. A., Nov. 3, 1917), says that no case of chronic constipation can be diagnosed correctly or should be treated as such until a thorough proctologic examination has been made through which rectal conditions are easily diagnosed. The examination is not of

itself sufficient, as these conditions are not always responsible for the constipation. The writer enumerates the causes of the condition, including ulcerations and irritable sphincter, the rectal valves of Houston, piles, stricture of the rectum. He concludes his paper as follows: "No case of chronic constipation is diagnosed correctly or should ever be treated as such until a thorough proctologic examination has been made. The same and identical rectal conditions may cause constipation in one patient and have no appreciable influence in retarding the excretion of feces in another. In many cases proctologic examination alone will not determine positively that constipation has its origin in rectal conditions. It must be supplemented by a careful roentgenographic and flourescopic study of the alimentary tract. Such a diagnosis insures the patient correct treatment and satisfactory results. Rectal conditions are frequently the primary causative factor of chronic constipation. On the other hand, constipation may be the cause of various rectal conditions. Whether the cause, or the result, of chronic constipation, the appropriate treatment of rectal conditions is essential if a cure is to be effected."

ROENTGENOGRAPHIC EXAMINATIONS.

In a review of about five hundred roentgenographic examinations of the urinary tract, E. W. Caldwell, New York (Journal A. M. A., Nov. 3, 1917), says that the more he has worked on his statistics, the more he has been impressed with the impossibility of obtaining absolute accuracy in the diagnosis. This fact he derives partly from answers to the questionnaire sent out to physicians referring the cases. He finds that errors in the diagnosis of urinary stone are almost twice as large as he had supposed, but the percentage is still smaller than that reported from various hospitals and clinics, and if all errors could be known he would not expect to find a larger percentage of error. The success of roentgen-ray examinations for urinary stone depends largely on the intelligent co-operation of the patient. For this reason, the results in private practice ought to be more accurate than those obtained in the treatment of hospital patients, who are large-

ly of a less intelligent English-speaking class. The economy practiced in most hospitals in the roentgenographic departments undoubtedly results in this low degree of accuracy. It is also possible that the mode of life of some of the foreign population, which forms a bulk of certain dispensary patients, conduces to the formation of uric acid or urate calculi which are not readily demonstrable by roentgenograms. A small percentage of error must be expected even under the best conditions, but we should remember that there is no absolutely infallible method of diagnosing urinary stone.

LEUKOCYTE COUNTS.

H. L. Kretschmer, Chicago (Journal A. M. A., November 3, 1917), emphasizes the value of making leukocyte counts on the urine. This he thinks is the only way one can obtain definite and exact information as to the severity of the infection. Moreover, it gives an idea as to the rate of the patient's improvement under treatment. The writer knows of no laboratory or clinic following this course, and says it is hard to see how they can get along without it. The method is particularly valuable for informing us of the progress of the patients treated by pelvic lavage in cases of infection of the renal pelvis. It may be criticised as being inaccurate and having possibilities of error, but its technic is as accurate as other methods and better than none at all. It would naturally vary with the urinary output, and, in order to make the counts as nearly as possible under the same conditions, patients are instructed to drink six ounces of water two hours before and six ounces more one hour before the urine is to be examined. In the making of the counts the urine is not centrifuged. The specimen is vigorously shaken to have it thoroughly mixed with the leukocytes. Toison's solution is drawn to the 0.5 mark and urine is drawn to 11. The mixture is agitated and a drop of fluid placed on a blood-counting chamber, covered with a cover glass, and the count is made in the usual way. The writer reports a number of cases and tabulates the results. The method does not cause any trouble or inconvenience to the patient while it is being carried out. No conclusions can be

drawn from a single count. The value of the method depends on making each count under identical conditions. The method itself should be considered from a standpoint of comparison. Its distinct value lies in showing the improvement made from time to time while the patient is under treatment.

GASTRO-ENTEROSTOMY.

C. A. Roeder, Omaha (Journal A. M. A., Oct. 20, 1917), describes the conditions that call for the operation of gastro-enterostomy and holds that bile and pancreatic juice in the stomach play a negative role in the conditions. He describes the anatomy and its normal variations, the causes of obstruction, etc. The good that the operation does is to relieve the mechanical difficulties. The gastro-enterostomy must assume a double function, draining constantly and freely the gastric and also the duodenal contents into the efferent jejunum. The roentgenogram may show the anastomosis to be working perfectly but with marked symptoms of vomiting, etc., owing to the fact that the duodenum is obstructed by the dorsal border of the mesocolon. The point of origin through the mesocolon is not constant, and the anastomosis should be made accordingly in the most convenient direction. Occasionally the lower border of the transverse mesocolon forms a distinct fold over the duodenal-jejunal flexure which when attached to the bowel may form a point of obstruction before and even after a gastro-enterostomy is done. If, at the time of operation, this fold is found to be developed sufficiently to constrict the bowel, it should be divided between ligatures.

MIGRAINE.

Max Einhorn, New York (Journal A. M. A., Oct. 20, 1917), rejects the autointoxication theory of the etiology of migraine from constipation and colonic absorption. Patients with migraine may be in good condition and apparently perfectly well at intervals, or they may belong to a group suffering from enteroptosis and weakness and be thin, anemic individuals. They may also have abnormalities in the visual organs or disturbances of the abdomen and genito-urinary system. The disturbances occurring during constipation are not necessarily secondary and the theory has been overestimated. Instead of being a place for

the absorption of toxins, the colon is a place where things can be kept without harm and unless there is some lesion, absorptions do not occur. In a great many cases the nervous systems do not originate from constipation, but the constipation is due to the nervous condition and the anxiety and worry about them. In treating the disease we must first try to eliminate any existing faults, such as astigmatism, enteroptosis, chlorosis, etc. It is of the first importance to reassure the patients and relieve them of any fear of poisoning. They should be told not to overwork, but to eat plenty of food that will not underwork the bowel and drink plenty of water. Mild aperients are allowable. Among these he mentions cascara, licorice powder, combined with the use of agar. The principle underlying all these remedies is that of instead of increasing the quantity, the patient should be told to take a little less every day, so that ultimately he may need to take nothing. No one should be operated on for these conditions unless there is some organic lesion present. Olive oil enemas are also recommended. Liquid petrolatum is also useful, but in many cases in which it does not act, agar-agar gives satisfaction.

THE TREATMENT OF EPIDEMIC POLIOMYELITIS WITH SO-CALLED SPECIFIC HORSE SERUM.

The recent reports by Rosenow and by Nuzum and Willy on the treatment of epidemic poliomyelitis with the serum of immunized horses, for which excellent results are claimed, are of considerable interest. The horses were immunized with the coccus recently found by several observers in the central nervous system in epidemic poliomyelitis, and consequently the question of the exact relation of this coccus to poliomyelitis is again raised. In both reports, it is asserted that the serum used has protective and curative powers with respect to the experimental poliomyelitis of the monkey produced by means of poliomyelitis virus, that is, suspensions in physiologic sodium chlorid solution of fresh or glycerinated nervous tissue from human beings that have died with this disease, or from monkeys experimentally infected. While the coccus with which the horses were injected unquestionably occurs in poliomyelitis, and frequently may be

present in the so-called virus, its exact relations to the disease have not been made fully clear because thus far it has not been possible to produce poliomyelitis in the monkey by injections of the coccus in undoubted pure culture. But in spite of the lack of this essential link in the chain of evidence necessary to establish that the coccus is the cause of the disease, it must be acknowledged that if the serum of horses immunized with the coccus protects against and even cures poliomyelitis in the monkey, an adequate experimental basis for a thorough trial of such serum in the treatment of the human disease certainly has been provided. It is clear, however, that the results of further experiments on the action of the serum in monkey poliomyelitis are required before the claims in favor of its protective and curative powers may be regarded as fully established. At this point it may be stated also that the assertion by Nuzum and Willy that a coccus quite like the one found in the central nervous system in poliomyelitis occurs regularly in the cerebrospinal fluid of poliomyelitis patients, not being in accord with the results obtained by other observers, cannot yet be accepted without confirmation from other sources.

Turning now to a brief consideration of the recorded results from the use of serum produced as indicated, we find that Rosenow treated fifty-four patients with nine deaths, but that six of the patients that died were moribund when the serum was injected, "and hence should not be included as treated patients." This would leave a death rate of 8 per cent. Sixteen of these patients were in the preparalytic stage, and all recovered. Of twenty-three patients in the same epidemic, nine died (35 per cent.) The effects of the serum in the individual case are often striking, at least apparently, because the symptoms soon subside, paralysis, for instance, being arrested and sometimes disappearing completely if in the early stages. As rapid improvement may occur spontaneously in poliomyelitis, as the diagnosis in the preparalytic stage must be difficult (sixteen of the patients treated with recovery are said to have been in this stage), and as it is impossible to form any opinion whether the treated and untreated patients that were the subject of this report are fairly comparable, it evidently is necessary, as Rosenow himself says, that many more patients

be treated before conclusions can be drawn as to the exact value of the serum he used.

Nuzum and Willy have treated 159 patients, eighteen of whom died (11.3 per cent.). Of 100 untreated patients admitted during the same period of time at the same hospital, forty-five died (45 per cent.). We lack, however, a more detailed comparison as to the ages, severity of attack and general condition of the patients composing the treated and untreated groups. We have no information whatever in regard to the principles of selection followed in forming these two groups; consequently it is difficult to determine how much importance may be assigned to the apparently very favorable figures given in this report. These observers also emphasize the rapid general improvement commonly seen after the injection of the serum, there being in many cases a critical drop of temperature.

In conclusion, it may be said that the injection of horse serum, in the manner described with detail in these two reports, appears to be quite harmless in poliomyelitis; that the authors of the reports are deeply impressed with the apparent good effects of the serum; that their figures appear to show a great reduction in the death rate, but that the figures are probably not to be accepted without the reservation that they may seem more favorable than is actually warranted. Further observations will be awaited with much interest. We hope it may be found, and quickly, that a potent, specific, anti-poliomyelitis serum, protective and curative, has been discovered. The suggestion may be ventured that even if it eventually should be found that serum produced as described in these reports has little or no specific effect on the essential cause of poliomyelitis, its use may be followed by favorable results due on the one hand to general nonspecific effects such as follow the intravenous injections of foreign proteins, and on the other hand to its action, specific in nature, on the cocæus used in the immunization, which may be a secondary invader of no little importance in poliomyelitis—*Journal American Medical Association, October 20, 1917.*

GASTRIC ACHYLIA.

M. E. Rehfuess, Philadelphia (*Journal A. M. A., Oct. 20, 1917*), sums up his findings from a study of the diarrhoea of gastric achylia sub-

stantially as follows: Different etiologic factors may be the cause of gastric achylia, each presumably of different type, such as psychic, infected, anemic and ductless gland types. Studies of achylia seem to indicate that either the entire cycle of gastric digestion, or only certain phases, are affected. Achylia may be found in apparently normal persons and studies of one such case indicate that there is a secretion formed without enzymes or acidity and probably with other properties not yet clearly understood. Artificially delayed secretion and induced achylia as well as the normal types observed were all unaccompanied by diarrhoea. Also the injection of partially digested material or even irritants into the duodenum fails to induce diarrhoea. In the so-called gastrogenous diarrhoea, the cause is to be found in an associated condition other than achylia, most frequently enteritis. If is not that, it is in all probability due to a disappearance of the normal protective barrier of the gastric hydrochloric acid. The lack of the acid alone, however, seems hardly sufficient as an explanation of the cause. Implantation of an intestinal infection or possibly a common cause inducing both achylia and enteritis may be responsible. In only one case was it possible for the writer to discover an associated pancreatic disturbance. A method of fractional and continuous administration of hydrochloric acid is offered as a new method in the treatment of this condition.

"SCIENCE."

"... the only difference between the hypochondriac and the consumptive is, that the one suffers from what the world would term a purely mental disease, imagining himself unwell, whilst the other has, unconsciously, thought himself into a condition of one of the many phases of disease."

So, editorially, speaks the *Christian Science Monitor* of recent date. This also, we opine, is the only difference between the soldier suffering from "shell shock" and the one who has had a leg blown off. For the *Christian Scientist*, germs do not exist; the tubercle bacillus is but a creature of the medical man's disordered fancy. The unreality of a germ as distinguished from the materiality, let us say, of the two-dollar bill which a *Christian Science* practitioner exacts for an "absent treatment" is based, presumably, on

the fact that one can be seen only through a microscope while the other is visible to the naked eye.—*Journal American Medical Association*, October 13, 1917.

CHRONIC CONSTIPATION.

H. W. Soper, St. Louis (*Journal A. M. A.*, Nov. 3, 1917), relates his experience with auto-intoxication in chronic constipation. The symptoms are too well known to need recapitulation, but their resemblance to the symptoms arising from focal infection and intestinal toxemia suggest an infectious agent present in the intestine. It has long been held by some clinicians that constipation alone could not be considered a distinct disease entity, as some persons in good health can go a week with only one or two dejections without causing symptoms. But the vast majority of persons do develop symptoms when the bowel function is imperfect. The question of absorption of toxic material seems to depend on the integrity of the intestinal wall. In a case presenting symptoms of auto-intoxication, the writer declares, we should first seek the focus of infection, investigating the teeth, tonsils, sinuses and genito-urinary system, as well as the intestine itself. In some cases, however, the most careful search will fail. Tuck's suggestion that venous stasis in the intestinal wall may increase its permeability to the passage of bacteria is considered plausible. Abnormal metabolism of food protein is a factor to be considered. This aspect of the question has been well stated by Brown, who reported cases showing marked improvement on a low protein diet. The work of Pemberton produced good results in rheumatic arthritis by a radical reduction in the carbohydrate in the diet. Besides bacterial infection, disturbances in the mechanics of digestion and aberrant biochemical processes, we must consider a fourth important factor, namely, the central nervous system. Numerous cases could be cited showing that toxic states may arise primarily from the result of disturbances in the central nervous system, that they are evanescent in character, and that they commonly disappear regardless of treatment. This should be remembered in estimating cures. The writer sees serious objections to

the indiscriminate use of the *Bacillus bulgaricus*. The fallacy of any attempt to secure its implantation in the intestinal tract has been amply shown. The daily use of purgatives is contraindicated, as they disturb the normal peristalsis, and the practice of flushing the colon by the use of drugs or water enemas is objectionable because such procedures result in the reduction of the contents of the colon to a liquid or semi-liquid state, which probably facilitates the absorption of toxic material. By sigmoidoscopic examinations in such cases, the writer found the mucosa covered with a thin fecal layer like that present in chronic diarrhoea which show marked symptoms of toxemia. He summarizes his conclusions as follows: "1. Treatment should be directed against any existing infectious agent. 2. Reliance should not be placed on the *bacillus bulgaricus* as a corrective agent. 3. The regular use of cathartics and water enemas must be avoided. 4. An initial radical change should be made in the dietary in an attempt to alter the bacterial flora. 5. The problem of the restoration of colonic function may demand the employment of all our therapeutic resources, medicinal, dietetic, hygienic and surgical."

THE RESTORATION TO FAVOR OF CREOSOTE.

Creosote has been employed by physicians with varying success for many years in the treatment of bronchitis, especially the bronchitis of pulmonary tuberculosis. Unfortunately, because of its disagreeable odor and taste, because it caused gastric irritation and distress, nausea and even vomiting, most clinicians were forced to abandon its use. For these reasons creosote is now rarely prescribed. It has fallen into disuse, even though it is admitted that it is possessed of therapeutic value.

A NEW CREOSOTE PRODUCT.

Calcreose, (a chemical combination of calcium and creosote, containing 50 per cent creosote) very largely overcomes the objections to creosote. Like creosote, calcreose, will allay cough, lessen expectoration and lower the temperature. Like creosote, Calcreose improves digestion and nutrition through intestinal antiseptics and stimulation. Like creosote, Calcreose is a stimulating expectorant.

Calereose is not a germicide, but it checks bacterial activity, checks putrefaction, lessens the production of toxins—hence reduces the toxemia always associated with intestinal infections. Like creosote, Calereose is possessed of all these good qualities but, unlike creosote, Calereose is practically devoid of all objectionable features. In other words, Calereose is an agreeable form of creosote medication, and when given in small doses at first, gradually raised in tolerance, it is free from any untoward effects. As high as 120 grains of Calereose has been given daily without digestive disturbance.

Unlike many creosote compounds, Calereose is comparatively inexpensive. A thousand 4-grain tablets costs the physician or druggist only \$3.00. Calereose is made by the Maltbie Chemical Company, Newark, N. J., and is advertised elsewhere in this issue of the Journal.

CYSTITIS.

M. W. Lyon, Jr., Washington, D. C. (Journal A. M. A., Oct. 20, 1917), reports a case of interest because it indicates the hemolytic properties of a colon bacillus, little mention of which occurs in medical literature. From a patient, an adult woman, who had an obscure bladder or kidney trouble, samples of catheterized urine were collected and tested by inoculation and culture observations on animals. The reactions of the isolated bacillus are given, one important point of interest being that it could not grow on agar like the ordinary colon bacillus, which is usually easy of cultivation. The writer quotes Schmidt as saying that the *Bacillus coli-hemolyticus* cannot be considered a well established variety and that, in his opinion, the hemolytic powers are accidental and not any special indication of pathogenicity. The inability to grow on agar, however, seems to show a high degree of specialization and adaptability on the part of the colon bacillus when what is an ordinary intestinal saprophyte can become so restricted in its habits as to need human blood or other complex proteins for its nutrition. Hexamethylenamin had no effect in restraining the organisms. Local and general treatment and the use of an autogenous vaccine caused marked improvement in the patient's condition.

THE INCIDENCE OF TUBERCULOSIS AMONG SOLDIERS.

When Major Eduard Rist of the Medical Corps of the French Army, assigned by the French government to the Surgeon-General's Office, announced at the meeting of the American Association of Military Surgeons held at Fort Benjamin Harrison this week that the facts concerning tuberculosis in France, and especially in the French army, do not agree with the exaggerated statements published in this country, he settled conclusively a point which has agitated civilian and medical tuberculosis authorities in this country since the beginning of the war. Major Rist stated that out of 1,000 men sent back to a base hospital as suffering with pulmonary tuberculosis, all but 193 were returned to the front with the diagnosis not confirmed. He said also that the chief cause of the too numerous diagnoses of tuberculosis was the fact that civilian physicians called to army life are too much inclined to make the diagnosis of tuberculosis on very slight evidence. In making a differential diagnosis the mistakes were not made through the difficulty of differentiating pulmonary tuberculosis from unusual maladies, such as abscess of the lungs, or pulmonary tumor, but far more frequently through the confusion of the diagnosis with minor complaints such as infections in the upper air passages, acute rhinitis, pharyngitis and bronchial inflammation. France, in need of every soldier, found it necessary to comb with a fine comb in order that no man be eliminated from the army through a mistaken diagnosis of this sort. The United States, with a supply of men far above the number that can be successfully trained and transported for military service, need not, perhaps, be so careful in eliminating men from military service because of the suspicion of this disease. In any event, making a diagnosis of tuberculosis and eliminating a man from military service for this cause wrongfully is not doing justice either to him or to the nation.—Journal American Medical Association, Oct. 13, 1917.

During Infancy and Childhood it is important but difficult to keep the bowels in order. It can be done by the continued use of

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TUBERCLE BACILLI IN BREAST MILK.

S. L. Wang and F. Coonley, New York (*Journal A. M. A.*, August 18, 1917), have examined the breast milk of twenty-eight tuberculous women for tubercle bacilli. They represented most of the types of tuberculous, and due precautions were taken in obtaining the milk. There was no apparent mammary disease or any suspicion of such, and about 450 microscopic examinations were made in the twenty-eight cases. Specimens from fifteen cases were injected into guinea-pigs intraperitoneally, with invariable negative results. Observations were also made on two guinea-pigs fed with breast milk from tuberculous women three times daily for a month. No evidence of tuberculosis was found in either. All their results were negative with one exception which may be questioned, and their experiments indicate that tubercle bacilli are rarely found in the breast milk of tuberculous women without mammary disease. The possibility of infection from this source is probably slight, but it is probably best to interdict nursing in every instance because of the other additional factors that may exist. An exception might be made that the mother with a closed case of tuberculosis might be allowed to nurse her infant, although it is often difficult to distinguish between a closed and open case after pregnancy and labor.

THE MEDICAL EXAMINATION OF THE DRAFT ARMY.

The announcement has just been made from Provost-Marshal General Crowder's office in Washington that in examining the remainder of the 10,000,000 men subject to draft and service in the National Army, information will be sought first as to the liability of each man for service, and the physical examination will follow only when the man is not exempt for some cause under the law. This is so obviously the correct order of the steps in the selection of men for service that it is surprising that this method was not adopted in the calling of the first 700,000 men.—*Journal American Medical Association*, October 13, 1917.

BOOK REVIEWS

NOSTRUMS FOR KIDNEY DISEASES AND DIABETES. Prepared and issued by the Propaganda Department of the Journal of the American Medical Association; 47 pages, illustrated. Deals with nostrums. American Medical Association, 535 North Dearborn Street, Chicago. Paper, 10c postpaid.

This is the latest pamphlet issued by the Propaganda Department of the Journal of the American Medical Association as part of its work in giving the medical profession and the public the facts regarding different phases of the nostrum evil and quackery. Nostrums for kidney disease and diabetes are grouped together in one pamphlet, not because there is any essential relation between diabetes and kidney disease, but because the average quack makes no distinction between the two conditions and recommends his nostrum indiscriminately for both. It is not necessary to tell physicians that drugs will not cure either kidney disease or diabetes, but it is necessary to apprise the public of this fact. Whatever justification there may be for the sale of home remedies for self-treatment, there is no excuse, either moral or economic, for selling preparations recommended for the self-treatment of such serious conditions as diabetes and kidney disease. Every "patent medicine" sold for the cure of these diseases is potentially dangerous and inherently vicious. The pamphlet is an interesting and instructive one to put in the hands of the layman.

THE SURGICAL CLINICS OF CHICAGO.—

Vol. 1, No. 4. 71 Illustrations. W. B. Sanders Co., Philadelphia.

This number of the Chicago Clinics is contributed to by fifteen of Chicago's most able surgeons and teachers, and a remarkable range of subjects is covered. "Craniotomy for Jacksonian Epilepsy," is the subject of one clinic by Ochsner, while Speed handles "Decompression for the Relief of Traumatic Epilepsy," "Decompression for Hypophyseal Tumor," and Occipital Decompression for Increased Intracranial Pressure." Bevan, Ryerson, Beck, Eisendrath, Straus, Curtis, Krenseher, Eisenstadt, Koliseher, Kretzmer, Stambaugh, Parker and Oliver are other contributors to this exceedingly interesting number.

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THE SURGICAL TREATMENT OF PROLAPSE OF THE REMAINING STRUCTURES AFTER THE REMOVAL OF THE UTERUS.*

By W. T. BLACK, M. D., F. A. C. S.,
Memphis.

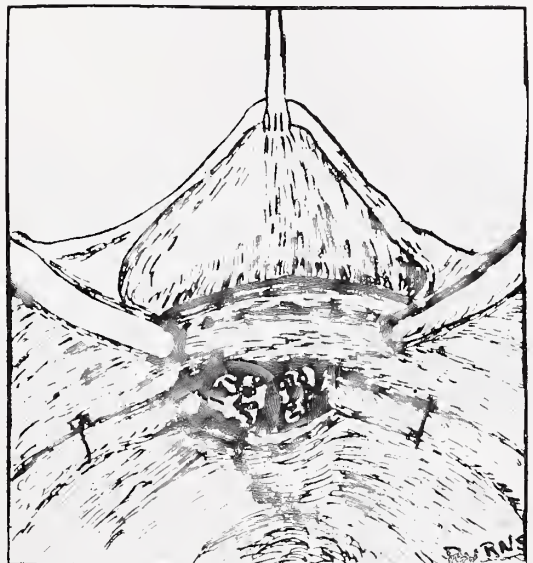
Owing to the improvement in surgical judgment and technic, patients rarely consult the gynecologist today for hernia following hysterectomies. An occasional case will, however, seek relief at the hands of the gynecologist for this condition, and when they do apply for relief, they will command your most earnest consideration. Unless one is experienced in this line of work, one may at first question what to advise in the way of an operation, for the reason of the rarity of the condition and because of the paucity of the writings upon the subject. Many of the text books do not allude to the subject at all, but some of the more recent works (Graves and Crossen) cover the field very well.

The etiology will not be gone into thoroughly in this paper, further than to say that the occurrence of hernia after hysterectomies for prolapse depends usually upon the technic employed in the management of the case or is due to poor results. The real etiological causes are, of course, similar to uterine prolapse and its accompaniments plus unsuccessful results, and aggravated by time elapsed between the previous operation and the time the patient seeks relief.

Every case of uterine prolapse should be viewed from every angle before attempting any operative procedure, for the methods adopted for a first or second degree prolapse would be entirely inefficient for a more advanced condition.

Failure to prevent a future hernia after a hysterectomy may be due, as a rule, to either faulty technic in the operative procedure, as described below, or to error in judgment in the selection of the type of operation.

Under the first heading will be included a failure to perform a high perineorrhaphy, a failure to implant the round and broad ligament stumps into the cervical or vaginal margin (Picture No. 2). If a vaginal hysterectomy has been performed, the lack of suturing the



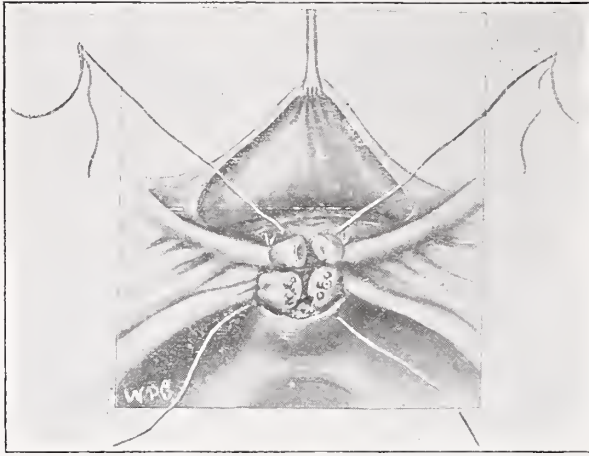
2

Failure of Approximation of ends of Round and Broad Ligaments to Vaginal Stump. Seen following Pan-Hysterectomy.

*Read at Annual Meeting of Tennessee State Medical Association at Nashville, April, 1917.

stumps firmly into the vagina, as advised by Mayo.

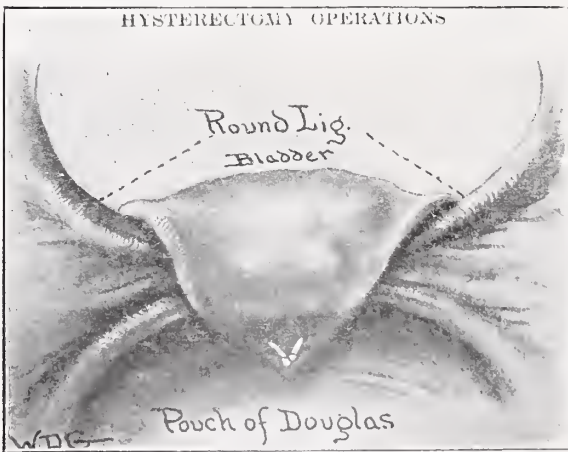
The error in judgment, in my mind, would be to rely upon the usual technic (Picture No. 1 and 3), as carried out in a supravaginal and a



1

pan-hysterectomy, where you have a hernia of all of the adjacent uterine structures, instead of performing a more radical abdominal fixation operation (Picture No. 6), or Mayo's vaginal hysterectomy.

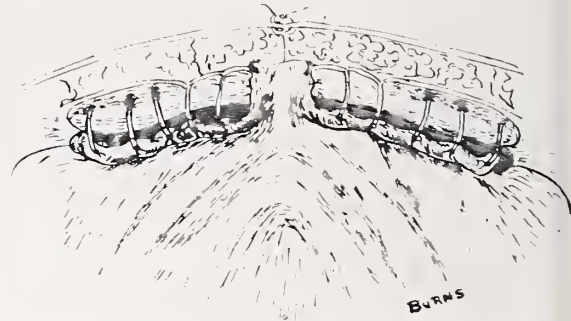
In cases occurring as a sequence to a spinal or nerve lesion, or where the ligaments are very much atrophied and attenuated, nothing less than an abdominal fixation will prevent a future hernia of the remaining structures. In



3

that type of women who are long waisted and who have broad hips, are constipated and toxic, where the entire muscular system is soft and flabby, where there is general visceroptosis, with possibly a diastasis of the recti muscles, the usual technic will not prevent further trou-

ble. In this variety of procidentia, there is not only a giving way of the perineal segment, but the pelvic diaphragm has often been torn loose from its attachments, the round ligament are atrophied and powerless, the broad ligaments, utero-sacral as well as the structures anterior to the uterus, are found sagging, and the vagina has been detached from its attachments to the rami. There is no support from the perineal body, the pelvic diaphragm and pelvic organs

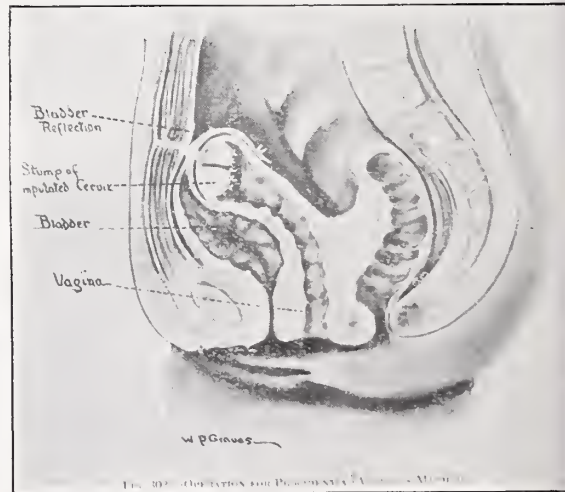


6

Vaginal Stump with Ends of Round Ligaments and Broad Ligaments anchored in Abdominal Wall.

are low in the vagina, intra-abdominal pressure is exerted in the wrong plane and a true hernia is present.

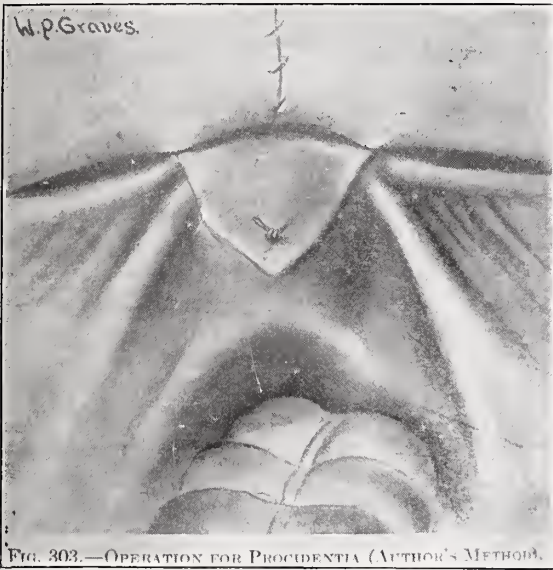
In the first and second degree prolapse the usual technic will usually suffice, that is, a



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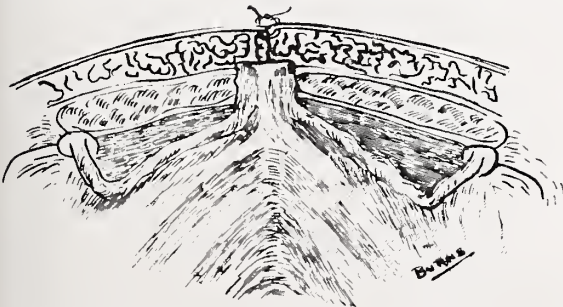
peri-neoplasty, colpoplasty, amputation of the cervix if elongated, and the usual method of implanting the round and broad ligament stumps into the cervix or vagina. In cases where you have a moderate degree of prolapse, but a relaxation of the anterior pubic and the posterior sacral segments, an abdominal fixation, as described by Baldy, or one performed

by Graves (Picture No. 5), or some similar attachment, will be successful. Crile performed a vaginal abdominal fixation, using a slit piece



4

of the vaginal wall drawn through and fastened to the abdominal fascia and muscles. Harris, in a severe case, ran the round ligaments through the vaginal walls and fixed them to the abdominal wall. Graves' method of abdominal fixation (Picture No. 4) is very similar in technic to the Olhausen operation which brings the



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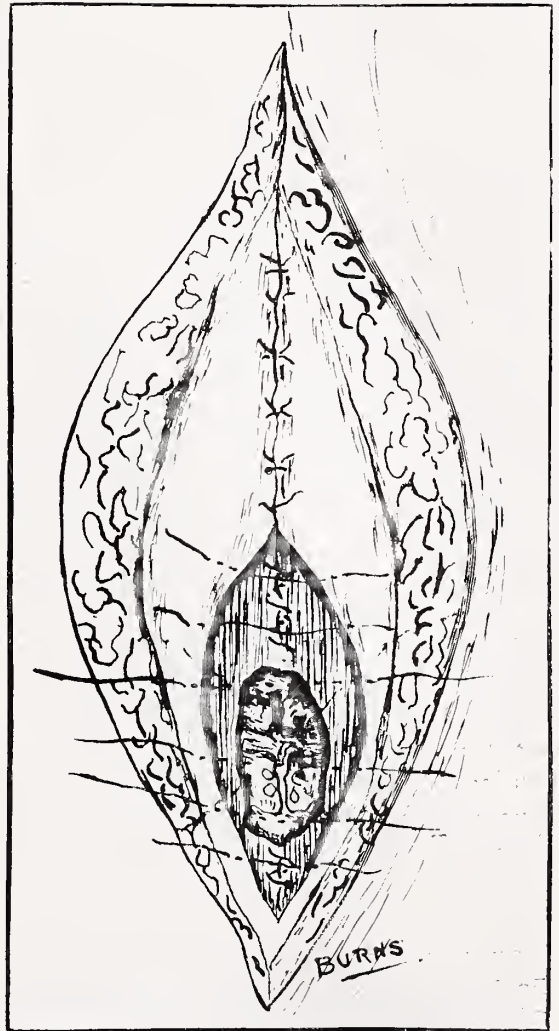
Stump with Round and Broad Ligaments anchored in Abdominal Wall. Ligaments sutured to Muscle on each side.

uterus up in contact with the anterior abdominal wall by suturing the round ligaments to the wall.

In cases where there is sufficient relaxation, the technic similar to performing an exo-hysteropexy (Kocher) is, I believe, the most satisfactory, where you have removed the fundus and body, or where you have done a complete removal. (Picture 6). In this type of operation you secure a firmer fixation and avoid the

dangers of a false ligament being formed, with its attendant dangers of obstruction. In some patients it may be advisable to resect a portion of the redundant vaginal wall before proceeding with the above operation. Occluding the vagina (colpocleisis) in elderly women, or lessening the size of the vagina by bands, rings, etc., in the vaginal wall, may be done with satisfactory results.

In exaggerated cases of herniation, where you have a perineal laceration (rectocele, enterocele, cystocele) and procidentia, with a lacera-



8

Anterior View of Stump Sutured between Muscle and Fascia.

tion and sagging of the pelvic diaphragm to an exaggerated condition, which is usually attended with a visceroptosis and general muscular weakness, I have found the following operation of value (Picture 7). Attention should first

be given to the pelvic outlet, after which a median abdominal incision should be made.

The cervical or vaginal stumps should be sutured into the abdominal wall by non absorbable suture material (Picture 6). Interrupted sutures are then taken, running partly through the round and broad ligaments and then through the peritoneum and muscular tissue of the anterior abdominal wall, as far out as the internal ring. It will be necessary in this, as in all other fixation methods, to fasten the stump near the pubic region so as to prevent a pulling in of the abdominal wall by the connecting structures and organs, which rest upon them. The fixation must be strong enough, also, to overcome intra-abdominal pressure. Care should be taken not to encircle entirely the round ligament, thus cutting off the circulation. In this operation you must anticipate vesical distention.

The advantages of this operation are, a firm abdominal fixation, the prevention of sagging of the lateral uterine structures, a better holding up of the anterior and posterior structures, the relieving of passive congestion, and the possible prevention of varicosities. The lateral and anterior pelvic cavity is entirely shut off from the abdominal cavity, which will act as a support to the abdominal organs, also lessening the abdominal space. This lessens the danger of intestinal obstruction.

Picture 8 shows an extra-abdominal view of the stump of the cervix or vagina.

In conclusion, we would say that the important treatment of hernia following hysterectomies is prophylactic, and the proper surgical treatment is the performance of whichever operation is deemed best, depending upon the amount of prolapse (and its sequence), plus the judgment of the operator.

DISCUSSION.

DR. H. M. TIGERT, Nashville: The subject of Dr. Black's paper constitutes one of the most formidable problems in gynecology. I know of no lesions in the female generative tract that are as difficult to handle as lesions in which we have prolapse of practically all of the pelvic viscera. That this problem is a difficult one is shown by the fact that a great many different operations have been devised to meet the various indications, and experience makes it quite evident that none of them are entirely satisfactory. Dr. Black is to be congratulated and commended for the operation which he

has shown on the screen. So far as I know it is an original operation. I have not seen it described elsewhere.

Prolapse of the remaining structures following hysterectomy is not likely to occur in the ordinary case of subtotal hysterectomy nor in the ordinary case of panhysterectomy, unless some prolapse was present before operation. In other words, in the ordinary cases where a proper technic is followed, the round ligaments sutured strongly to the cervical or vaginal stump, as the case may be, and the infundibulo-pelvic stumps brought firmly down, there is no reason why prolapse should occur. The class of cases that give trouble are those in which the technic is not properly followed and those in which more or less prolapse was in existence prior to the operation, but which was not fully recognized by the operator and proper steps taken at the time of operation to correct it.

To relieve these cases I think we must, so to speak, begin from below. The first indication to be met is to constrict the soft parts at the pelvic outlet and, of course, there is no procedure for doing this equal to a high perineoplasty. In addition to this, it may be necessary to do an anterior colpoplasty at the same time, although, in many cases, this may be dispensed with. If one is dealing with a hypertrophic cervix it may be necessary to do high amputation of the cervix after the Hegar method, but this may be dispensed with when an atrophic condition of the cervix exists, or when the cervix is normal. The abdomen should be opened from above and a hysterectomy performed, subtotal or pan, according to the indication. If a subtotal hysterectomy is done I think the technic described by Graves is good, viz., stitching the stump to the anterior abdominal wall. When the bladder is deflected the utero-vesical peritoneal flap should be separated well down on the anterior vaginal wall and, when stitched, fixed high up on the stump in order that there may be no ptosis of the bladder following operation.

One class of cases particularly difficult to handle are those in which there are extensive adhesions and little peritoneal surface to deal with. In these one should stitch the round ligaments and the infundibulopelvic stumps as best he can to the vaginal stump.

One word with regard to the prevention of rectocele. The Moscovitz operation, which is very simple, is one of the most efficient means of preventing this. It is performed by introducing a circular stitch at the very lowest point of Douglas cul-de-sac and another a little higher and still another still higher and so on until five or six have been placed. These stitches should not be introduced until the rectal wall is put on tension. By obliterating the cul-de-sac in this manner all future trouble with the rectum, so far as prolapse is concerned, is obviated.

Dr. Black is to be commended for bringing this matter to our attention. I think it is important

that surgeons give careful attention to prophylactic work of this kind, which can be successful only by careful technic at the time of operation. These patients naturally object to second operations and it is up to us to fix them the first time we are inside.

DR. W. D. HAGGARD, Nashville: I think the plan outlined by Dr. Black ought to be very efficacious in those cases where the sewing of the fundus to the stump will not suffice. I think, perhaps, we have utilized that in lesser degree where we had the old time prolapse and fixed the fundus of the uterus high to the abdominal wall. Where we take out the tubes and ovaries we have a raw surface which can be used by sewing it to the abdominal wall. As the essayist has said, the way to prevent prolapse of the structures in these cases is at the time, but I think we ought to go a step further. I do not believe hysterectomy for prolapse is of any particular value. Most of the cases that we are confronted with and are difficult are those in which hysterectomy has been done, but the real lesion has not been corrected at all, because the prolapse due to the uterus is only a portion of the prolapse. As we well know, it is a turning inside out of the vagina, and particularly the bladder, to say nothing of the rectocele. To cure the prolapse is not enough; it is the bladder that gives trouble. The two operations that would deal with the bladder first would be the Watkins-Wertheim operation, dissecting the bladder off entirely in front and freeing it from the uterus and pushing it back over the abdominal cavity and sewing the uterus in front of the bladder. That operation will absolutely hold it because it swings down from the broad ligament. If you transpose the bladder in these cases and put it back up, you cure the prolapse. If that operation does not suffice, the thing to do, if you do a hysterectomy at all, is to sew the broad ligaments together at the side just as clamps bring them together, and put the bladder back over, in and above, so that the broad ligament forms an absolute barrier against the bladder coming down. Next do a high perineorrhaphy from below. If the trouble has happened, if some one has taken out the uterus, and there is rectocele, then of course you do the work from below. If we bear in mind what the essayist said, we will not take out the uterus for prolapse and not deal with the essential structures, namely, the bladder and the rectocele.

DR. E. M. HOLDER, Memphis: I have not had much experience with prolapse of the pelvic viscera following operation. Unless your patient has a pre-existing prolapse, there is no reason why she should have a prolapse following hysterectomy.

It seems to me that the plan of the essayist of stitching the round ligaments across to the abdominal wall would be effective if the stump is fixed to the abdominal wall, but that method houses in the bladder rather closely and you may have trou-

ble with bladder symptoms. Perhaps Dr. Black will answer that question in his rejoinder. It gives little space for expansion of the bladder.

In taking out these prolapsed uteri, where they dangle between the legs, as they do many times, we always encounter a very pronounced cystocele and a rectocele, and if we do not correct the cystocele and rectocele, the patient will come back telling you that there is a protrusion just like before you operated. She does not recognize the difference, and naturally, because if the cystocele and rectocele are not cared for at the time of the operation, the patient is not relieved; moreover, the ordinary operation for cystocele is not satisfactory. It is best to dissect away a V-shaped section of the roof of the vaginal wall, including not only the mucosa but the fascia, expose the anterior wall of the bladder, then cut out that section of the fascia and bring it together, suture it separately with buried chromic sutures, and later the vaginal mucosa. Having done all this, you have not finished. You shall locate the central ligament of the bladder, which comes down centrally from above, and attach it to the two round ligaments. In this way the bladder is supported on a tripod composed of the central ligament and the two round ligaments, which is a splendid operation for this condition.

The operation for rectocele is simple, the Moscovitz or any other you may see fit to use, but primarily you do a high closure of the perineum by the so-called anatomical method, bringing the recti muscles together to support the rectum. As I have said, the bladder is supported on a tripod formed by the two round ligaments and the central ligament of the bladder; in this way the cystocele is corrected and the old perineal laceration has also been repaired. If you go into the abdomen and propose to do a hysterectomy that way, it seems to me, you should be careful to bring the stump up and attach it to the round ligaments, or rather attach the round ligaments to the stump of the cervix. After completing that, go below and finish the work there and you have completed a very satisfactory operation.

DR. BLACK (closing): With regard to the use of suture material, I have used nonabsorbable suture material for the stump, sewing it to the abdominal wall. The rest of the sutures are chromic catgut.

The condition I have described is rare. Usually it does not occur. I have ignored dealing with the conditions for which the hysterectomies were originally performed, consequently I left out all of the interposition operations (the Watkins-Wertheim operation), and left out fixation of the uterus to the abdominal wall to prevent future prolapse. The paper dealt with a condition after the uterus had been removed completely or incompletely.

The Watkins-Wertheim operation, as suggested by Dr. Haggard, is of course impossible, for you are dealing with a condition where the uterus has

been removed. As to the condition of the bladder, Dr. Holder spoke of the possibility of having future trouble. I did this radical work first in a case in which the uterus had been removed. The woman had undergone a complete hysterectomy. When I was called to do the final work the round ligaments were away from the stumps. The stumps of the broad ligament were not in place. The whole thing was down and out of the vagina, between the thighs, and after going in and finding the structures so relaxed, I felt something had to be done radically. I followed out the work of others of fixing the stumps to the vaginal wall and then suturing it to the abdominal wall, but after carrying the operative procedure that far, I found there was a sagging of the lateral walls of the broad ligaments and the structures continued to prolapse. I did the operation in the way described not knowing the effect it would have on the bladder, but making allowance for distension of the bladder.

In regard to curing these cases by the simple ordinary technic of supravaginal, or panhysterectomy, of sewing the stumps to the uterine cervix or vagina, it will not cure them at all. You can sew the vagina and almost close it up, and still the structures are so relaxed, the ligaments have become so thinned and attenuated, the vagina loses its tone, so that nothing short of an abdominal fixation will cure them. The pelvic diaphragm is practically destroyed, it is torn and sagging, and you obtain no support from it. The perineum will not hold it, the levator ani muscle with the fascia acts as a supporting ligament, but the principal support of the uterus is the pelvic fascia. You must do something radical to hold that up. The ordinary operation, unless it is a prolapse of the first or second degree, will be absolutely ineffective.

A NEW SPECIES OF STREPTOTHRIX ISOLATED FROM A CASE OF RAT BITE FEVER.

(Preliminary Report)

WM LITTERER, A. M., Ph. C., M. D.,
Prof. Bacteriology Vanderbilt School of Medicine, Nashville.

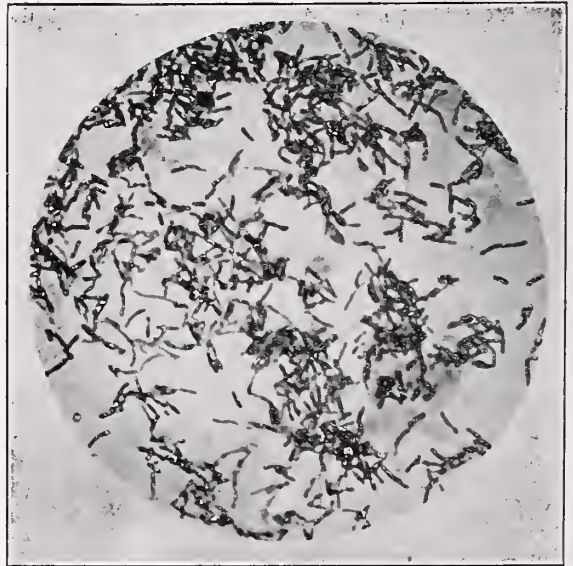
Rat bite fever has long been recognized in Japan as a definite febrile disease following the bite of a rat.

It was first recorded in America by Wilcox (1) in 1840. But it remained for Miyake (2) in 1899, to first describe the disease in detail as a definite clinical entity when he reported eleven

cases of his own, with reference to others in the Japanese literature.

Up to the present time, according to Blake (3), there have been eighty-one cases of human rat bite fever reported. The disease is distributed over practically the entire world, since cases have been recorded not only in America and Japan but from France, Spain, Italy, India, Great Britain and Germany.

The etiological factor of this disease was not known until 1914, when Schottmuller (4), of Germany, was first to describe a microorganism which he had isolated eight consecutive times from the blood of a case of rat bite fever. He considered the organism a streptothrix and



I.

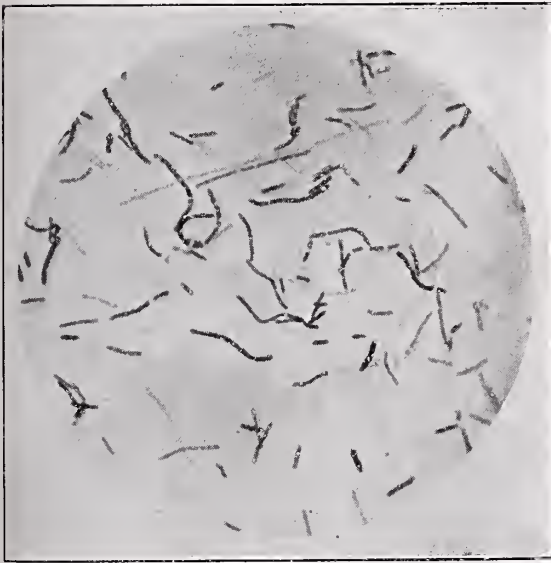
Streptothrix Muris ratti from a 24-hour Loeffler's blood serum culture showing irregularly swollen and homogeneously stained filaments. Also note branching of filaments. Carbol-gentian violet.

called it *Streptothrix muris ratti*. In 1916 Blake (3), of the Rockefeller Institute, N. Y., was the first to isolate the micro-organism since its discovery by Schottmuller. His article is quite comprehensive, describing the organism in minute detail from its cultural, morphological and tinctorial standpoint. Since the case came to autopsy valuable pathological data have also been collected by this author.

Tileston (5), of New Haven, Conn., reports a case of rat bite fever in which he was unable to cultivate the micro-organism, but was able to describe a streptothrix in fresh preparation of blood by means of the dark field and also by

stained smears. His case was the third in which the streptothrix was found in the blood. Ruth Hunnicliff (6), of Chicago, has published a very important contribution concerning the great similarity of the streptothrix in bronchopneumonia of white rats to the streptothrix isolated in cases of rat bite fever. She surmises that if wild rats suffering with a streptothrix bronchopneumonia should bite individuals that it was probable that the disease could be conveyed in this way.

In the case of rat bite fever to be described in this paper there was isolated from the blood a streptothrix which differed in cultural char-



II.

Stained preparation of *S. M. R.* (Dil. Carbol-fuchsin) from a 24-hour growth on human blood agar. Note the fusiform swellings, branchings and homogeneously stained filaments.

acteristics from any that have heretofore been described. This is the third case of rat bite fever in which a streptothrix has been isolated and cultured from the blood since Schottmuller discovered it in 1914.

Characteristics of the Disease: Rat bite fever is generally transmitted to man by the bite of a rat. This is not a constant rule, however, because the weasel, ferret, cat (Blake), rabbit, (Nixon) and squirrel (Schottmuller) have been known to be infective. It is doubtful if the animal is always sick when carrying the organism, since no case has been reported in which the infecting rat or animals seemed to be diseased. Blake suggests that the streptothrix might be a

saprophyte in the mouth of a rat. It might exist as such and cause disease when the animal's resistance is lowest. Tunncliff found that in sixty white rats with bronchopneumonia that 93 per cent. were infected with a streptothrix very similar to the Schottmueller and Blake micro-organism. She surmises that if wild rats suffering with a streptothrix bronchopneumonia should bite individuals it was probable that the disease could be conveyed in this way.

Clinical Symptoms: Rat bite fever is a paroxysmal febrile disease of the relapsing type following the bite of a rat. The wound heals readily, but after a variable incubation period of a few days to a month the wound becomes inflamed and painful. Lymphangitis and adenitis set in and are quickly followed by symptoms of systemic infection ushered in by a chill and rapid rise in temperature. There is often extreme prostration, severe generalized muscular pain, headache, weakness, and loss of appetite. Stupor, delirium, and even coma may supervene. There is muscular tenderness and rigidity and the tendon reflexes are frequently exaggerated. A characteristic exanthem of bluish-red, erythematous, sharply margined macules appears, varying in size from 1 to 10 cm. in diameter and of general distribution. After 5 to 9 days the temperature falls by crisis accompanied by a drenching sweat and all symptoms subside. The disease then assumes the relapsing type with paroxysms occurring at fairly regular intervals, usually about once a week. The course may vary from one to three months or even longer. Gradually the relapses become less frequent and less severe and the disease often terminates with an abortive paroxysm. The more important complications are nephritis, severe anemia, and emaciation. About 15 per cent. of the cases terminate fatally, usually during the first febrile period, occasionally later from nephritis or exhaustion.

Report of Case: The patient was referred by Dr. H. C. Guerin, of Dickson, Tenn. Name A. L., male, age 14, weight 150.

On May 15, 1916, was bitten by a rat on back of neck. The wound healed perfectly. About three weeks later was taken with chill, fever and sweat. Temperature 104 for several hours, which gradually subsided in two days' time. During the paroxysm the site of the rat bite be-

came very greatly swollen, edematous, hyperemic and painful. It was quite indurated, as well as the lymph nodes on that side of the neck. A general lymphadenitis existed to a moderate degree. During the height of the paroxysm there was noticed a purplish mottled erythematous eruption over the body. This subsided with the fever.

All of the above symptoms passed off in a few days except the persistence, but to a less degree of the indurated mass at the site of the bite and also the enlarged lymph nodes in the cervical region. The indurated mass at no time showed suppuration, although a sero-sanguinous fluid



III.

Streptothrix M. R. from a 60-hour Loeffler's blood serum culture showing marked irregularity in staining. Note fragmentations of mycelial threads appearing as chains of cocci or short bacilli. The unstained beaded effect gives the appearance of spores.

exuded therefrom when an incision was made into it. Attempts at culture on the various media resulted in sterile findings throughout. Cover slip preparations and dark field revealed negative findings.

Another paroxysm of chill, fever, and sweat resulted about five days from the first one, which was quite similar to the initial one. Blood examination was made which showed Reds 4,200,000, Hemoglobin 80 per cent., Leucocytes 18,700, Polymorphonuclears 80 per cent., Small Lymphocytes 8 per cent., Large Lymphocytes 6 per cent., Eosinophiles 6 per cent.

Blood Cultures: Blood cultures were made on different media. Twenty-five cubic centimeters of blood were drawn and placed in different proportions in various media. Growth was only obtained with acetic broth (1 to 4) in which 5 per cent. human blood had been added 30 days before. Four cubic centimeters of the patient's blood added to 100 c. c. of the above medium appears to be the ideal proportion for the growth of the micro-organism. The growth proved to be a streptothrix similar to the Schottmuller and Blake streptothrix, but differing very materially from it in several cultural and tinctorial characteristics which will be discussed in detail in a paper to be read before the A. M. A. Pathological Section, June, 1917.

Treatment: An autogenous vaccine was made from this streptothrix which apparently cured the case.

The disease became very much less aggravated soon after the use of the vaccine. All symptoms disappeared in three weeks after its use. The lymph nodes had entirely disappeared in five weeks.

Conclusions: I. Rate bite fever is a rare disease, only eighty-one (81) cases have been recorded. This is the first case that has been reported in the South.

II. A new type of streptothrix somewhat similar to the Schottmuller and Blake type was isolated from the blood of a typical clinical case of rat bite fever. This is the third time in which a streptothrix has ever been isolated from the blood of cases of rat bite fever.

III. A specially prepared media (old human blood ascitic broth) was necessary for first cultivation of this particular species of streptothrix.

IV. The employment of an autogenous streptothrix vaccine, so far as the records show, has never been attempted. The therapeutic results of such a vaccine has apparently cured the patient.

Note: I desire to express my indebtedness to Mr. Wright McMilliam, my assistant who has rendered valuable aid in working out the cultural and tinctorial characteristics.

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DISCUSSION.

DR. F. J. RUNYON, Clarksville: I saw the last case reported by Dr. Litterer. So far as I recall, there were no after-symptoms at the site of the bite.

DR. LITTERER: They disappeared after relapse. A week later there was sweating which, after several weeks, disappeared, and the wound healed entirely.

DR. RUNYON: A very interesting point in the case was its obscurity. I diagnosed an infection, but the nature of the infection I did not know, because there was absolutely no symptom at the site of the wound. However, every seven days there was a recurrence of this paroxysm which lasted a few days and passed off.

I am very glad the case has been worked out so beautifully by Dr. Litterer; I thought it was a malarial case because the patient lived near the river and in a malarial locality.

DR. JOHN A. WITHERSPOON, Nashville: I believe those of us present should, at least, recognize the wonderful work, the original research work, that is being done right here in our midst. Dr. Litterer has but one recreation—I might say two—one is dancing and the other is looking for bugs; and this may turn out to be not only original work, but it may turn out to be worth something in these cases simulating relapsing fevers that we have in our midst from rodent infection. For my part, I have not only enjoyed Dr. Litterer's paper, but I wish to congratulate him on his research work and his great ability in this line. (Applause.)

REMARKS ON LEUKEMIA.*

By WILLIAM ST. JOHN, M. D.,
Bristol.

Some weeks ago a gentleman came to my office and asked me if there were "such a disease as lithaemia", and I said "Yes". He said,

"Is it contagious?" I said "No". "Is it dangerous?" I said "No". He said, "My niece died with it in Hopkins Hospital. I got a letter about it today and went to see my family physician. He said that they had made a mistake in the name, and scratched out the name and wrote above it 'Lithaemia' ". I asked for the letter and saw that the original word was LEUKEMIA, and thought how charming an idea it would be if a physician could change one disease to another by simple erasure, but "there is the rub."

Leukemia can not be blotted out, prevented or cured by our present knowledge. It is a remarkable and sad disease, affects both sexes, all ages, and has a predilection for adult males. It has a duration from a few days in acute cases to several years in chronic cases. It affects practically every organ in the body; is marked by one or many remissions. It is neither a very new nor very rare disease.

Dr. John Hughes Bennet, in 1845, first described it, but his diagnosis was made at the autopsy; about one month later Rudolph Virchow reported another case, and his diagnosis also was made post-mortem. Vogel, in 1849, was the first who correctly diagnosed this disease in life. Bennett gave it the name of "leucocythaemia"; Virchow called it "leukemia".

More modern authorities separate the disease into two varieties, namely, lymphemia and myelaemia. They both have the same pathology, the same remissions, the same exacerbations and the same physical signs, the same nodules in the skin, involving liver, bones, peritoneum, respiratory system, urogenital system, nervous system, ears, eyes, throat; also hemorrhagic tendencies, anaemia, spleen and lymph glands. The differential diagnosis between the two varieties has little importance from the viewpoint of treatment, which is the same in each.

The clinical manifestation as regards spleen and lymph nodes do not afford a basis for differential diagnosis between the two forms of leukemia. The diagnosis can only be made by microscopical examination of the blood. The disease is always leukemia when the proportion of leucocytes to erythrocytes is one to 15 or less (Magnus Huss says 11 to 50), when the leucocyte count is more than 30 times greater than

*Read at Annual Meeting of Tennessee State Medical Association, Nashville, April, 1917.

normal and when, at the same time, many of the cells are conspicuously immature. The white corpuscles in the great majority of cases are abnormal in number or nature, commonly in both.

The disease has its seat in the organs which form the life stream, namely the spleen, the marrow and lymphatic tissue wherever situated. The thymus, which is atrophied in adults, is an additional blood forming organ in the infant and in leukemia it is often found to be present in full activity, illustrating a fact that when the organism goes wrong it retreats to broader ground, and reverts to a mode of life to which it had come. It would seem that the life of the body retains vividly the memories of the past. In normal health the marrow alone forms red cells and leucocytes, while the spleen and lymphoid tissue form only lymphocytes.

Malaria, syphilis, heredity, poverty, alcoholism, injury and exposure have practically nothing to do with the causation of this disease. It is thought by some to be due to an infection, and this probably of an intestinal origin. Others have thought a stimulus to be the cause. Still others regard it in the nature of a malignant growth, but there are no metastases in leukemia, and again, new growths do not undergo the same remission as leukemia. Ward says that it appears certain that there are everywhere in the body, and probably in close relation to the capillaries, mother cells which have potentiality of developing either into myeloid or lymphoid tissue. It is a re-awakening of these into activity which constitutes the basis of leukemia.

Lymphemia is, therefore, defined as an apparently purposeless overgrowth of lymphocyte forming tissue reflected in the blood stream by varying increase of lymphocytes or their forerunner. Myelaemia, on the other hand, is an apparently purposeless overgrowth of leucocyte forming tissue reflected in the blood stream by a varying increase of leucocytes or their forerunners.

The discrimination between myelaemia and lymphemia can only be made by blood examination. In myelaemia the blood is myelocytic, that is, myelocytes are present in enormous number, with an increase in eosinophiles and mast cells; oligocythaemia is moderate; erythroblasts are numerous, the normoblastic type predominating. In lymphatic form the blood type

is lymphocytic, that is, an increase in the lymphocytes, myelocytes being absent, or present in small number. There are a few eosinophiles or mast cells; oligocythaemia is moderate; erythroblasts are few in number.

We have recently had under our care a classical case of chronic lymphatic leukemia, which covered a period of seven years and which was attended by several marked remissions. The case commenced with sore throat, cervical, axillary and inguinal glands involved. This enlargement was generalized from the first, soft to the feel and discrete. The left leg and thigh enlarged very early, probably due to pressure from enlarged spleen, but may have been due to abdominal gland-pressure. The spleen, however, was massively enlarged, extending beyond the navel and middle line downward, and below it; had frequent attacks of peri-splenitis, later had swelling in both legs and abdomen from anemia, and marked dyspnoea, cough, attacks of fever, ranging from 103 to 104, but with remissions during which there was absence of fever; blood count showed white cells 300,000 to, at the terminal, 750,000, 93 per cent. being small lymphocytes. Haemoglobin was 10 per cent. with last count.

Practically every treatment known was used in this case, the only one giving any benefit having been the X-ray, and this was merely temporary.

This patient being dissatisfied had a "Christian Science practitioner" come and treat her, and two or three days after her arrival commenced to improve remarkably—began to take nourishment, was up at the 'phone talking to friends, out automobile riding, and to all intents and purposes on the high road to recovery. This condition lasted about two weeks, when the disease set in again and was not long ending the scene. We did not have an opportunity to examine the blood while the "practitioner" was in attendance, but are inclined to believe this was a distinct remission. The last count reported was made after the "practitioner" departed.

Another case which came under our care recently was that of a man about thirty-eight years of age, good color, had lost some flesh, complained of substernal pain and enlargement of left side of abdomen and gave history of

having had the trouble eighteen months. On examination the manubrium was tender to pressure; no enlarged glands, but the spleen was much enlarged in all directions and slightly tender. There were no other symptoms. The blood examination showed a characteristic picture of myelogenous leukemia.

From Hodgkin's disease the blood findings usually at once differentiates leukemia, while from Addison's anemia the diagnosis may occasionally be difficult, for the reason that in this disease a few myelocytes are commonly found and the red cells may show the identical changes, but an actual increase of white cells rules it out.

The course of this disease is variable, not uncommonly lasting ten years, averages about two years. There are periods of relatively ill health and periods in which the patient declares "he never felt better in his life." No direct relation can be traced between the degree of leukemia and the duration of the disease. The cause of death is usually due to asthenia. The gradual increase in the blood state tends to increase prostration, to increasing oedema, to increasing interference with functions of vital organs until the patient sinks from myocardial weakness. However, quite a number die from septic broncho-pneumonia.

The treatment recommended is arsenic, salvarsan, X-ray, benzol, radium, and also thorium and mesothorium, which are allied to radium. Benzol acts very similarly to arsenic and X-ray, producing marked improvement in some cases and having very little effect in others. It is said that it acts more promptly when the X-ray has previously been employed. It is thought that the rays act by preventing the formation of leucocytes, as well as by breaking them down. Some observers consider this same breaking down as due to the production in the blood of a substance toxic to leucocytes. Great care must be taken in the actual application, for X-ray in this disease is not without danger.

Removal of the spleen has been attempted, but usually with fatal results. As the marrow is the primary seat of the disease it is not to be expected that splenectomy would serve any useful purpose. The treatment at best can only relieve symptoms and prolong life.

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DISCUSSION.

DR. I. G. DUNCAN, Memphis: I should like to say that this is the best paper I have ever heard on leukemia; the Doctor covered the ground very thoroughly and I believe he left out nothing.

I have seen two cases, one of them myelogenous and the other lymphatic, and the differential count in the myelogenous case was 95 per cent polys, and the lymphatic differential count was 95 per cent lymphocytes. The Doctor should be complimented on his paper, inasmuch as he covered the subject very thoroughly and adequately, and I do not think any improvement can be made on it.

DR. JOHN A. WITHERSPOON, Nashville: I think this paper is too important to pass by without more discussion. With reference to myelogenous leukemia, together with lymphatic leukemia, either we are learning to diagnose these cases better or they are growing more frequent.

In the last six months I have seen two acute cases of lymphatic leukemia, both of them lasting but a very short time, in which the lymphocytes were largely in excess. One patient was a young man who had a tonsillar infection, the tonsils were removed, after which he apparently began to improve. Soon after some infection about his gums, he began to bleed, and there was quite a hemorrhage there around the alveolar processes which was uncontrollable. It looked almost like hemophilia; it would stop, then come on again. The man then developed a lymphatic enlargement, the spleen became enlarged, he became very anemic, and died in great prostration within a month with diarrhea with hemorrhages of all kinds, vomiting blood, passing blood by the bowel, and having those rapidly developing symptoms of acute lymphatic leukemia.

The other case was a child that died promptly within a month after taken with acute leukemia, which first started as an ordinary diarrhea.

One remarkable feature in connection with Dr. St. John's paper is the length of time that one of his cases lived with lymphatic leukemia. I have never known a case of lymphatic leukemia to last

ten years. Myelogenous leukemia may last a number of years, in which you have a large leukocyte count, enlarged spleen, marked anemia, the patients being greatly prostrated, and with marked exacerbations. The patient gets quite sick and seemingly is going to die, but then takes on improvement; the blood cells begin to improve; the spleen is reduced materially in size, and the patient apparently is entering upon the convalescent stage. The facts are these are the most deceptive cases in the world, and one may congratulate himself that he is doing more good with his arsenic or various preparations, but they are deceptive in the fact that they do not last. These patients invariably have a return of symptoms and die with the disease. Therefore, Dr. St. John is right in saying we do not know how to cure it.

I rise particularly to discuss the question of treatment in connection with the use of the X-ray. Stengel of Philadelphia, many years ago, made the statement that, in view of the fact that there was a disturbance in the circulation or the blood cells, or there was not much the matter with the spleen, the use of the X-ray over the spleen was all wrong and that we should use it over the long bones. In the use of the X-ray over the bones affecting the myelogenous substance, many cases have improved very remarkably, but, gentlemen, among all treatments, including the X-ray, arsenic, the cacodylate of sodium possibly has done more good, but they are all deceptive. These patients all have their exacerbations and remissions, and the man who congratulates himself on curing leukemia either makes a mistake in diagnosis or he does not follow his cases carefully.

DR. S. T. HARDISON, Lewisburg: I want to report briefly a case of leukemia in a member of this Association (Dr. Ferguson), a man who weighed 250 pounds and was six feet high. After eating a hearty dinner New Year's Day, and not having been sick before, he went home and had a spell of vomiting and lost his appetite. I was called to see him and I could not see that there was very much the matter with the man. He said, "It is one thing sure. I want you to make an examination of me and make a diagnosis." He did not want to take any medicine. He went along without any material change. He came back in two weeks with the same thing in mind. When I turned him over I could feel motion. At that time upon the slightest examination an enlarged spleen was revealed. He came to Nashville to see Dr. Cain and Dr. Nowlin. They examined him and thought he had leukocythemia. Dr. Ferguson went on with the same intermission, having taken a remedy he thought was benefiting him, then he had a relapse. A few days before death he suggested that he had malignant trouble and said that when he was dead he wanted a post-mortem held to find out what the trouble was. Post-mortem revealed in that man a greatly enlarged spleen,

which was taken out and sent to the museum in the University of Nashville. The spleen weighed 8 pounds and 4 ounces, perfect in shape and perfect in location, but an exceedingly large organ. Another particular thing was there was a smaller body which looked like an embryo of a new spleen growing or becoming attached to the spleen. At that time we heard nothing about the X-ray, and we did not know very much about splenectomy. I feel that I ought to report that case because it is in harmony with this paper.

While I regret the loss of Dr. Ferguson and that he might have received better attention, I notice by these reports that all these patients have died, so I think, after all, our treatment was about equal to that given these other patients, all of whom died. (Laughter.)

DR. ST. JOHN (closing): Dr. Witherspoon misunderstood me in regard to the length of time my patient lived with leukemia, and yet it is a disease which not uncommonly may last for ten years. The case I reported lasted only seven years. I do think our knowledge has materially increased in regard to this subject; I more than likely have seen many cases of leukemia and did not know what it was. I do not think that there has been any increase in the disease, but am of the opinion that the reason we hear of more cases is due to the fact that the average doctor's diagnostic methods have improved.

Here I would offer the suggestion that where we are in doubt a blood count should be made.

I wish to thank the gentlemen who discussed my paper, and to express my appreciation for your kind attention to the same.

THE ROENTGEN TREATMENT OF UTERINE FIBROMYOMATA AND HAEMORRHAGIC METRITIS.*

By W. S. LAWRENCE, M. D.,

Memphis.

For the past ten, and particularly the past five years the roentgenologic journals of this country, England, Germany, and France have been filled with articles on this subject. Every one who does an extensive X-ray practice has written something. Thousands of cases have been placed on record. There is a most remarkable unanimity of opinion among men who have had experience in this work. There is also a living and contagious enthusiasm among them.

*Read at Annual Meeting of Tennessee State Medical Association, Nashville, April, 1917.

And yet the simple facts that I am here to set forth are not believed by most of you, and to few indeed have they been proven beyond the question of a reasonable doubt. You are not fully convinced that the X-ray properly administered will cure practically every case of hemorrhagic metritis. You do not believe very steadfastly that fibroid tumors will melt away under the influence of Roentgen energy—yet such are the facts in the case.

The first authentic record of a case of this nature is to be found in the *Journal of Advanced Therapeutics* for September, 1904. In this issue, Dr. J. E. Hett, of Ontario, Canada, reports a case of large uterine fibroid successfully treated with the X-ray. From this time on there has been an ever-increasing number of cases reported until now, when cures by roentgen therapy have become so common that they no longer inspire comment.

It has long been known that the ovary is the most sensitive tissue in the female body to the action of the X-ray, and that by the application of these rays the function of the ovary may be stimulated or depressed, or altogether obliterated at will, in accordance with the amount of X-ray dosage. It is also known that ovarian function and distorted function is largely responsible for menstruation and menstrual ills; that menstrual disturbances react upon the uterus and adnexa and give rise to many of the ills to which this part of the anatomy is heir. What more reasonable, then, than to suppose that applications of the X-ray might influence for good many menstrual disturbances and conditions resulting therefrom? The good results of roentgenotherapy, as given by Albers-Schonberg in 1909, and confirmed by all leading roentgenologists since, are as follows: First, a cessation of the menses, and associated with this (a) a decrease in size or total effacement of myomas when present; (b) disappearance of pain associated with myomas; (c) sterilization when indicated. Second, disappearance of myomas unassociated with bleeding, such as occur after the menopause. Third, the control of many menstrual disturbances at any stage, at times without sterilization, and when necessary with sterilization.

But do not understand me as advocating the roentgen treatment for all cases of fibroids.

Surgery is the method of choice in most cases, and certainly most cases in young women. There are indications and contra-indications for the treatment. Above all, these cases should be carefully selected. Each and every one should pass through the hands of a competent gynecologist.

Indications.—First, all cases of myoma in older women in whom there is already a well advanced anemia. Second, all elderly and young women with myomas in whom there is marked organic heart disease, diabetes mellitus, chronic nephritis, marked lung disease or thyroidism. Third, all patients beyond the age of forty in whom there is no contra-indication to the treatment. In general, the older the patient, or the nearer she has approached the menopause, the more prompt and satisfactory will be the result.

Contra indications.—First, pedunculated tumors that can be excised without destroying the reproductive powers of the patient. Second, fibroids that have become malignant or gangrenous. Third, fibroids that are producing such marked symptoms that time is an all-important factor.

In treating a case of fibroid tumor, the first result to be noted is decrease or cessation of the hemorrhage. With this the general health improves. The patient regains color, weight, spirits, strength and appetite. The tumor itself is last to show any effect. After all bleeding has stopped and most of the symptoms have disappeared, treatment is discontinued. By this time the tumor has been considerably reduced in size, and this reduction will continue after the treatment is stopped, until the tumor has either disappeared entirely or become so small as to be harmless.

Method of Treatment.—Briefly, it is this: Use rays of great penetration. Filter through three or more mm. of aluminum. Use a number of ports of entry. Give as much through each as the skin will stand with safety. Give this amount of treatment in the course of four or five days or a week. Do not repeat the treatment in less than two, and preferably three weeks. This sounds simple, but do not imagine that it is.

One, two or three series of treatments may be required according to the susceptibility of the patient. Carried out in this way there is practi-

cally no danger either to the skin or to the general health of the patient.

While in comparatively few cases of fibroid tumors is roentgen therapy the method of choice, the same cannot be said of haemorrhagic metritis. Here it is the method of choice in every case. This is true whatever may be the age of the patient, but I refer particularly to this condition when it develops at or near the menopause. In a true case of haemorrhagic metritis there is no visible or known pathology or etiology. There is no fibroid, no malignancy and primarily there is present only one persistent symptom—hemorrhage. This hemorrhage is so severe as to be described by the patient as flowing or flooding. This is the so-called "bleeding womb" of the laity.

Secondary pathology and symptoms are not lacking. A secondary anemia with low hemoglobin percentage soon develops and, following this, symptoms of poor digestion, muscular weakness, insomnia and general nervous breakdown. Early cases of haemorrhagic metritis may be cured by complete hysterectomy, but late cases are very poor surgical risks. All cases, early or late, can be easily and permanently cured by radiotherapy. This may be administered either by radium or by the X-ray. Owing to the cost of radium and to the inaccuracy of dosage, the X-ray is to be preferred.

In closing, permit me to report one case which is quite typical of a number of others that I have treated. Mrs. F. L., aged about 40, referred by Drs. Bryce Fontaine and Frank Graham. Dr. Graham made a gynecologic examination and reported that there was no discoverable pathology to account for the hemorrhage and that the case was to be regarded as one of hemorrhagic metritis at the approach of the menopause. The patient was flowing six or eight days at a time several times each month. Palliative measures including curettage proved of no lasting benefit. The patient was very weak and pallid from loss of blood. Hemoglobin percentage was under forty. Hysterectomy was considered, but the patient was regarded as a bad surgical risk, and she was therefore referred to me for X-ray treatment. The lower abdomen was divided into three areas of about nine square inches each. Through

each of these was given a so-called massive dose, which means about what the skin will stand with safety. This amount was given daily until six areas had been treated—three over abdomen, one through either gluteal region and one through back. The hemorrhage subsided promptly after the fourth treatment. Two weeks later when the patient returned for further treatment there had been only a slight flow. The treatment was repeated. Since the last treatment there has been no return of hemorrhage and now, six months later, the patient has entirely regained her health, strength and color.

DISCUSSION.

DR. HOWARD KING, Nashville: I feel that the program committee has made a somewhat unwise selection in appointing me to open this discussion, because my experience in the treatment of uterine fibromyomata and hemorrhagic metritis by the X-ray is quite limited. In fact, I have only treated two cases with the modern ray treatment, that is, by the Coolidge tube, and, by the way, let me say here, that to attempt to treat cases of this kind without the Coolidge tube is extremely uncertain and difficult, if not impossible. For the man who is practicing in the smaller towns and is not able to be equipped with this apparatus, it would not be a wise plan to attempt to treat, for instance, with a portable apparatus or with a small X-ray apparatus with gas tube these cases unless he is thoroughly aware of the workings of the tube, for the reason that if he puts three millimeters of aluminum in the ordinary gas tube and one that is used for radiographic work, he will get very little of the ray into the deeper structures. Furthermore, if he does not filter it, he would be very apt to burn his patient.

Of the two cases that I have treated, one was fibromyomata with hemorrhage, and the other a case of hemorrhagic metritis, where I was not able to follow either one to a successful termination. The first case had a very bad heart in which it was absolutely impossible to consider operation. This was the case of fibromyomata. This woman was already somewhat anemic, she had loss of compensation, had considerable edema, with dyspnea. She was treated on account of the hemorrhage mainly, and not on account of the tumor being large or giving her any trouble. The hemorrhage improved a great deal and in a few months the patient got along from that standpoint all right. I had her physician make two or three pelvic examinations and he reported that the tumor was somewhat smaller. The hemorrhage was greatly reduced.

The other case was a charity patient; I was not able to follow this case afterwards because I could

not get her reports. After the first week or two there was some improvement, but the patient never returned.

I am glad to have heard this paper by Dr. Lawrence. It was very concise. He presented the subject in such a simple way that any medical man could get the idea and understand him.

I am sure he has not exaggerated the favorable results in his paper from X-ray treatment, from what I have observed in reading the literature of men who have done as much or even more work than Dr. Lawrence in this particular line. Those men even give more favorable reports than he has given us in his paper. He has not made any claims for those cases that are not indicated—in other words, cases that are certain. He has told you that these cases have been referred to the X-ray man by competent gynecologists. In Nashville, when a gynecologist passes on such a case for X-ray treatment, I think the X-ray man certainly ought to be congratulated and deserves it.

DR. J. S. CAMPBELL, ~~Gardonsville~~: I have enjoyed the paper of Dr. Lawrence very much. I am doing no X-ray work, but am interested in this method of treating some cases of fibroid tumors of the uterus, the efficiency of which has been clearly demonstrated by the essayist. These patients are often poor subjects for surgery, and again many who could be relieved in this way refuse the chance for fear of both the knife and the anaesthetic.

Fibroid development only takes place during the actual sexual life. At the menopause they naturally undergo atrophic change and often cease to produce symptoms.

Now, while the essayist considers the X-ray treatment more effective at this age, it appears to me from some experiences that I have had that this may be only apparently so. In my early practice I had a patient 47 years of age with a large fibroid tumor of the uterus. She had menorrhagia and was emaciated and very nervous. I insisted on her going to a surgeon for relief, but she was afraid and kept putting the matter off. In about twelve months I was called to see this patient on account of another trouble, when I found that she was relieved of the symptoms of the fibroid and that the tumor was very much diminished in size. This patient got perfectly well to all appearances. I have seen two other patients with uterine fibroid tumors at the climacteric age clear up in this way, but never saw a case take this course during the age of active menstruation.

DR. J. M. KING, Nashville: I am very glad indeed that Dr. Lawrence has presented this subject. It is a new subject to most of us. The literature has come out in special journals devoted to the study of reports of roentgen ray work. Some of it has come out in the American Medical Association Journal and the state journals, but

most of it is confined to the special journals and what he has said is absolutely true.

Dr. Lange of Cincinnati has done a great deal of work of this kind, and Dr. Pfahler of Philadelphia has been doing this work with the same favorable reports as those given by Dr. Lawrence. I have done some of this work with just as much success as a hysterectomy would give from a physiological standpoint. I recall one case I treated where the menstruation was excessive, the woman had small fibroids, she was anemic, thin, but after two series of treatments the patient gained in weight, she has a hemoglobin of 95 per cent, has taken on flesh, and is now like another individual.

I am glad Dr. Howard King uttered a word of warning with reference to the gas tube. This work should be done with the Coolidge tube, which is a great improvement on the gas tube, because it holds the vacuum more steady, the penetration is more intense and more effective. It can be done with gas tubes, provided the tubes are changed. But the point I wish to impress is that this is a new subject. We will all come to it gradually just as we do all new subjects that are introduced in medicine. The gynecologist will select his cases and will refer them for X-ray treatment later on as he fully understands the application of the X-ray.

DR. W. C. DIXON, Nashville: Dr. Lawrence has presented a very interesting and live subject to this Association, and one that we all feel interested in on account of the great prevalence of fibroid tumors in the uterus, and I might say on account of the great prevalence of X-ray machines.

As regards the treatment of fibroids by radiotherapy, it appeals to the popular imagination because they do not have to be cut, they can be treated without losing any blood and without taking ether, and consequently it is a method of treatment that appeals to the laity.

I must say, the doctor has been very conservative in his indications for treatment, very much more conservative than the general run of the literature from the X-ray men. However, when we come to consider this method of treatment and consider further referring patients for X-ray treatment, there are certain things to be borne in mind. In the first place, we all know and realize that a large percentage of women with fibroids have associated conditions that cannot be relieved by the X-ray. In a recent paper by Dr. Mayo the statement was made that 30 per cent of all patients who come with fibroids have such serious disease of the tubes and ovaries that they require surgery for the relief of the associated pathology, leaving out of consideration the question of the fibroid itself.

Malignant degeneration of fibroids, while not particularly common, is certainly common enough to make us exceedingly careful about trusting to the X-ray to cure these cases. Miller, who worked

with the Germans Kronig and Gauss, who are ardent advocates of the X-ray method of treatment, collected from the literature a series of 9,000 fibroids, and showed that 2 per cent of them had undergone sarcomatous degeneration. The statistics in regard to carcinoma associated with fibroid vary from 5 to 10 per cent. As women approach the menopause the occurrence of carcinoma in association with fibroids increases. Ten per cent of women over 50 years of age with fibroid tumors who come to operation, according to Bland Sutton and according to Mayo, have carcinoma associated with the fibroids.

There are certain degenerations that occur in fibroids, a great many of which do not amount to anything, due to changes in the nutrition of the tumor, but there are certain so-called red degenerations that occur in three or four per cent of the cases which are serious. So, if we stop to consider, we can eliminate about 50 per cent of the women that have fibroids from X-ray treatment because they have such serious associated pathology that the X-ray could not benefit them. All of the X-ray men, I think—in fact, every one—agree that the value of X-ray treatment consists in its destructive action on the ovary, not the direct action on the tumor, but more for its destructive effect on the ovary. It is harking back to the old days when the ovaries were removed as a treatment for fibroids. We must bear in mind that if the X-ray is used to the extent of stopping bleeding, it must be used to the extent of destroying the ovarian tissue, consequently the only difference is, we might call this an internal operation, and removal of the fibroid be classed as an external operation, because if the X-ray does any good it must be used in sufficient doses to produce destruction of the quality in the ovary that controls the flow of blood.

One of the speakers referred to the disappearance of fibroid tumors. I looked this question up recently and was able to find few cases reported where fibroids had disappeared. I would be glad if Dr. Lawrence would give us his observations and results on that point. Some of the German literature particularly speaks of the cure of cases that have ceased to bleed. Amenorrhea is considered a cure, but I do not think we can accept that as a cure simply because a woman has stopped bleeding. Pfahler of Philadelphia says that the women who are most amenable to treatment are those around 40 years of age. I made the statement a minute ago that that is the time when most serious degenerations occur in fibroids. These degenerations occur in fibroids in 69 per cent of the cases at about the time of the menopause. That is the worst time to subject these patients to a type of treatment that has not been conclusively proven to be an absolute cure.

DR. C. N. COWDEN, Nashville: The question brought up by the essayist is one of great interest

to us. There is no question at all that nonmalignant growths of the uterus can be very much diminished and the hemorrhage from them stopped by the use of the X-ray. It is true of hemorrhagic metritis; still, one of the best things I know in the treatment of uncontrollable hemorrhage from malignant growths or degenerations in the uterus is the X-ray. Numbers of cases I have seen controlled almost perfectly. The X-ray does something else besides that. Many times we relieve patients from the pain associated with these inoperable conditions. I believe that there is another chapter that has to be written in regard to these patients. We get a retrograde metamorphosis or an atrophic condition taking place in the tissues there and we leave them. When vasomotor changes take place, when we get to the place where we have hardening of the arteries, I believe the majority of these cases are going to develop malignancy, and the patients we are passing up today as cured by the X-ray are going to come back to us later on with inoperable conditions of the uterus. I trust that it may not be that way, but we are leaving behind some pathologic tissue the result of which we do not know. We do know, however, that the stimulating effects from the X-ray has a great many times resulted in malignant conditions, and I believe here is a series of cases about which another chapter will have to be written.

DR. LAWRENCE (closing): I thank the gentlemen for their discussions. Replying to the remarks of Dr. Cowden, he believes many of these patients will develop malignancy later on. I am not discussing at all what the doctor believes. I am confining myself to what we know. There is a difference in what we believe, and what we think is going to happen, and what we know. I do not know that they will not develop malignancy; I hope they will not.

Referring to the remarks made by Dr. Dixon, I thank him for calling attention to the fact of my conservatism. The reason I am conservative is not because I am not enthusiastic of what has been done and what can be done, but simply because I was afraid you would not stand for any more. A great deal more can be done and is being done, and has been done, along these lines than I called attention to, yet I hope I am conservative. I certainly do not advocate the promiscuous treatment of fibroid tumors by the X-ray. In all young women, surgery is the method of choice where you can leave the ovaries for their internal secretion. The X-ray does as completely suppress ovarian function as their surgical removal—that is, the X-ray carried to the limit.

I would like to call attention to one more remark that Dr. Dixon made, namely, that we will do harm by raying these patients to that extent. A great many of them you do not have to ray to that extent. I said the function of the ovaries could be

stimulated, controlled to some extent, or altogether obliterated, according to the amount of dosage. We do not know, of course, how large a dose it will take for one patient or another; some are much more susceptible, but where the conservation of the ovarian function is to be desired, we do not give a patient the massive doses and destroy the ovarian function entirely. A great deal can be done in regulating a great many conditions, such as painful menstruation, insufficient menstruation, too great a menstruation. All these things you can control and regulate to a considerable degree. I do not advocate the total obliteration of the ovary by the ray in all cases.

Referring to Dr. King's remarks, I want to thank him for telling you that I sometimes tell the truth. They do not know that at home; I am glad I have that reputation in Nashville. (Laughter.)

Referring to Dr. Howard King's remarks, he is quite right in saying that we should not attempt to treat cases of this nature with an insufficient apparatus. It cannot be done satisfactorily unless the equipment is adequate. However, some good can be done, and if the operator knows what he is driving at and knows the power and limitations of his equipment, he may do some good; but he cannot treat the general run of gynecological cases as they should be treated without modern equipment.

PNEUMONIA.*

By J. S. CAMPBELL, M. D.,
Gordonsville.

My apology for selecting a subject so much beyond the comprehension of a paper suitable to an occasion like this, is to recall the fact that the universally recognized king of acute diseases still lives and seems to be gaining virulence for the mastery of our existence. It stands as the leading general in the rapid marching ranks of disease as conspicuously as tuberculosis did a few years ago in the columns of diseases leading to slow, but certain death.

Only the two most common forms, known as catarrhal or broncho- and croupous or lobar pneumonia will be considered. The broncho-type is one of the most cowardly and irregular in its habits of any malady known. It is always a secondary affection of some recognizable disease or of the constitutionally weak. Hence, it preys exclusively upon the extremely young or

it joins the armies of the contagious and infectious diseases of those a little older, or else it waits to assail those of declining years who are overcome by renal, heart, or lung diseases, the victims of alcohol and of extreme age. Its onslaughts are characterized by the signs of dyspnea, a bronchitis, rise of temperature, increased pulse rate and hurried breathing. Marked prostration soon follows, accompanied with a restless, anxious look. The temperature ranges from one hundred one to one hundred and four degrees and changes in this sphere several times daily. Bright eyes, flushed cheeks, rapid breathing, and dilated alae nasi is the index to the involvement of the lungs. Percussion sounds vary from the normal to many distinct points of dulness. Auscultation reveals moist mucous rales and bronchial breathing; besides, the different cases produce a variety of sounds difficult to describe. It is not a self-limited affection, but may cause a fatal ending in a few hours or continue for several days or weeks, to end by a gradual process in recovery or in death. An irritable cough begins early and continues throughout the course; or the most debilitated subjects may not be able to cough and death comes to them in a short time.

Lobar pneumonia, in its most common form, is a more classical disease and is unusually regular in its attacks and habits throughout. It was for ages considered to be the dare-devil malady as it was thought to prefer to battle against the strongest and most vigorous of mankind. This, doubtless, was a very erroneous conclusion for while it does attack subjects of this apparent character, how often do we find that they have been exposed to a direct cause for shock or temporary disability? Or, has the first impression been accepted and no further investigation made to determine a cause for its appearance? We know that it does attack babes and children of the weaker class and, again, that it is so common in the age of decline that in the language of Hare "Indeed it may be said to be Nature's method by which she removes from the list of the living those who have had their span of years." It is defined by the same author as "an acute infectious disease, characterized anatomically by bacteremia and toxemia, and a local inflammation in the lung progressing to consolidation." Again, he says that "The local lesions in

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the lungs are accountable for some, but not all of the patient's symptoms"; that "the patient ill with croupous pneumonia is suffering from a general infection with the pneumococcus"; that "organs other than the lungs may harbor morbid lesions at least as well marked as the local pulmonary lesions"; that "in some cases these are susceptible of clinical recognition"; and that "the severity of the clinical manifestations in a given case depends upon the virulence of the infecting pneumococcus and the resistance offered by the patient. The extent of the lesion, be they in the lungs or elsewhere, bears no necessary relation to the severity of the general symptoms which, on the contrary, are an expression of the toxemia". Again, while "from an etiological standpoint every case of pneumonia is identical, from a clinical standpoint one case is as different from another as small-pox is from chicken-pox, for in one case the coccus is a cat and in another it is a tiger".

When I speak of the pneumococcus I do so with a burning consciousness of my limited information. But it is plain to a common observer that many people are comparatively immune to its infection, even under conditions described which makes them most susceptible. Also, that one attack weakens the natural fortification against it, and another attack may be expected from a less exposure than the first one was known to follow, and so on with others until the subject seems to be wholly unprotected. Rush reports twenty-eight attacks in one individual, while Cornell, in the *Journal A. M. S.*, March 17, 1917, reports the case of a stillbirth in which the pneumococcus was found in the pericardium and pleural cavity, with the intimation that it was the cause of death. Its mother was found to be harboring the same pneumococcus in her tonsils and vaginal discharges, though she showed no evidences of having pneumonia.

Lobar pneumonia begins with a distinct hard chill and has a regular course to a crisis which usually takes place in from five to nine days, or else, less often, the crisis will not appear, but a gradual change will take place often, at a little later date, and continue to recovery or death. This type needs no comment.

But a deep "core involvement" may be hard to diagnose. Light percussion over the area

may produce an hyperresonant sound. And, if there be considerable distension of the colon, a tympanitic sound will result from percussion over the lower border of the left lung; and besides this, the toxic symptoms are much in excess of the local findings. In the extremely asthenic cases there may be no fever, pains, cough, or even rales; in whom the entire absence of sound over the dull area with rapid breathing, dilated alae nasi and cyanosis are our landmarks.

In children there is often a short prodromal state of irritability followed by extreme nervousness, or even a convulsion, but the usual form begins with rigors, soon to be followed with high temperature, fast breathing, pain in the abdomen vomiting and notable prostration. The case resembles that of an abdominal lesion more than any other of the chest. These symptoms persist for from twenty-four to forty-eight hours before cough or physical signs appear. Rapid labored breathing indicates the lung involvement. After the regular signs develop clearly, the case progresses in the ways described for the adult.

Some cases of pleurisy with effusion may require the aid of an X-ray or an aspirator to differentiate them from pneumonia, though the symptoms of the two diseases are usually quite distinctive.

Every case of pneumonia has its points of difference from every other case and will require treatment or no treatment accordingly. Therefore, a few general suggestions on the subject of treatment will close this paper.

Prevention should be the first object, and in my judgment, is more overlooked or neglected in this disease, considering its possibilities, than in any other disease with which I am acquainted. If the universal rule were adopted of spraying the nose and throat frequently with a good antiseptic of any known to be peculiarly susceptible to pneumonia, as well as all those who have it, we would lessen the number of cases to an astonishing degree.

Next, the disease that has lowered the vitality of a patient should be eliminated if possible and the pneumonia symptoms guarded against the extreme limitations. The patient's strength should be supported by every possible means for the combat. Many patients of the stronger class

who are taken suddenly will need a dose of calomel, to be followed by a saline as early as possible, after which the stomach should be guarded against the old nauseous treatments of cough syrups, etc., for, in many instances, life depends on the action of digestion. Further than stated, the broncho- and lobar classes are as one disease from the standpoint of treatment. Nourishing liquid diet to the full capacity of digestion is needed throughout. No patient with broncho-pneumonia should be given a depressant in any form. The same holds true in the lobar type, but this disease attacks more suddenly—often while the stomach and bowels are overloaded and, occasionally, when the volume of blood is excessive. If these conditions are overcome early enough the heart will be relieved of excessive work and the digestive organs improved.

Elimination should be kept up throughout the case by drinking water freely and often and by daily enemas of pure water and, if needed, a mild laxative to be taken occasionally. A daily sponge bath should not be neglected, which, if followed with a light rub with alcohol is very invigorating. Fever is an essential reaction and should not be regarded below one hundred and four degrees, but if it rises above this point it should be restrained by the sponge bath, an ice cap to the head, or by flushing the colon with cool or even cold water—one or all of which may be needed. The patient should be encouraged to rest as much as possible and to sleep at night from the beginning to the ending of all cases.

The common disturbances of anxious relatives and friends have fixed the destiny of many with the disease, and it is the physician's duty to warn against and to use his best tactics to prevent them as soon as a case is taken in charge. The help of a trained nurse is essential in this matter as well as in the performance of many other duties required of a constant attendant. The patient should occupy a large room cleared of all fixtures and furnishings not needed for his or her comfort. This room, if protected against precipitation, can not be too well ventilated with a temperature at or above the freezing point in many cases. The air fresh from the outside world is the greatest tonic known for lung diseases. Keep the pa-

tient's body protected, but allow the crippled lungs free access to the purest air tolerable for which they are constantly hungering. This will vary many degrees in different individuals and should be regulated with much care. Since adopting this plan my patients have had less discomfort, less fever, and decidedly less sign of heart failure.

"Look out for heart failure" has rightly been the watchword in pneumonia for many years, and while I have emphasized the greatest of all remedies for this condition, fortunately, there are many others should this one need assistance. Give a dose of strophanthus, strychnia or digitalis and have it repeated when the condition occurs again. Quite as much harm, if not more harm than good, has resulted from practices of having these powerful agents repeated at regularly fixed hours. It is extremely unfortunate when a competent judge is not in constant attendance to administer them.

And now in closing, may I say that I have not expected to instruct this very superior body of professionals, but have only hoped to remind some one of the dangerous ruts into which all are more or less inclined to fall.

DISCUSSION.

DR. A. A. EGGSTEIN, Nashville: It is useless to refer to the amount of scientific work that has been done upon pneumonia with more or less barren results, but recently there has been considerable work done upon the types of pneumococci. This work offers some hope to the solution of the problem of pneumonia in the future. This work was begun by Dr. Rufus Cole of the Rockefeller Institute, who has been able by immune reaction to divide pneumococci into four groups, groups 1, 2, 3, and the miscellaneous group. He has been able to do this to a certain extent by culture characteristics and immune reaction in animals by the agglutination tests, i.e., by a mixture of immune serum and pneumococci and injecting the mixture into mice. Dr. Cole found the immune serum protected mice against the homologous group. He has isolated pneumococci from cases of pneumonia and found the most frequent cause of pneumonia to be types 1 and 2, which is of medium virulence, while type 3 is more the type of the streptococcus mucosus and is the more virulent type. Of the four group, or miscellaneous group, found frequently in the throat, the virulence was not so marked. The fourth group has recently been divided into twelve different types. It goes to show that our old idea of the pneumococcus is not sufficient; that there are different types of pneumococci just as there

are different types of streptococci, and that probably, as much as anything else, explains the difference in severity of the different cases of pneumonia, some of them more severe, some of them less. Of course the resistance of the patient has to be considered. Along with this work, considerable work is being done on the chemotherapy of pneumococci. As salvarsan affects chiefly the spirochete, by having certain chemical bonds with affinities for the spirochete, and not for the tissue cells, so in pneumonia work has been done with some of the derivatives of quinin (optochin), which seems to have a specific action upon the pneumococcus.

Another point to which I wish to call attention, which is of interest to me, is this: the number of cases of pneumonia that are clinically overlooked and come to autopsy. So many cases in coma, diagnosed as morphin poisoning, fractured skull, or unknown cause, turn out to be pneumonia. The physical signs were unrecognized. Probably the patient was in such a low state of vitality that symptoms did not show, but at autopsy they were found to have a distinct frank pneumonia unassociated with other pathology, pointing to pneumonia as the exact and only cause of death.

In the Journal of the American Medical Association, February 17, 1917, Drs. Bissell and LeCount report 400 cases of coma. The highest per cent were associated with fractures of the skull, cerebral hemorrhage, meningitis. Pneumonia stood fourth in the list as the cause of coma. So in examining cases of coma distinct physical signs of pneumonia should be carefully looked for, being so easily overlooked. When from hospitals we get so many cases that are well worked up, and still pneumonias are overlooked, it behooves the general practitioners to go into his cases of coma with the firm conviction that many are due to pneumonia.

DR. JOHN A. WITHERSPOON, Nashville: I do not agree with the last speaker that these are frank pneumonias; in fact, we have seen this year very few real frank pneumonias. I do not remember in my whole experience of thirty-odd years of practice seeing so many variations from the old described croupous pneumonia with the stage of congestion, red and gray hepatization with the various physical signs, with right lower lobe involvement, and so on, as we have seen this year. In fact, very few cases this year had started in the old original way. Most of them have been where the croupous pneumonia apparently was rather slow in developing, with physical signs developed so that one felt sure he had pneumonia to deal with.

Another thing: The pneumonias have come in spots, and not like those referred to by Dr. Campbell, broncho-pneumonia, lobar pneumonia, and pneumonia of the old type, but there have been cases of mixed infections or so-called grippal pneu-

monias. I have seen cases with solidification under the right scapula, in the lower lobe, in which the physical signs did not develop until long after symptoms had developed.

Another very important feature has existed in pneumonias this last winter, and that has been the extremely low temperature. It was not a question so much whether we had a strong, robust person or not. Very few of them bore the plain, open-faced, frank pneumonic picture of chill and a high fever and bounding pulse and red cheeks and sputa of rusty color. On the contrary, you have a tenacious sputum, most of it not rusty, but it has developed rather late. And another feature is that the temperature, which is always to my mind a rather alarming feature, has run low, never going to 104 or 105 degrees.

Dr. Eggstein referred to the number of cases showing cerebral complications. A great many of them showed almost symptoms of the development of meningitis, the Koenig sign existed, with tenderness back of the neck. All these symptoms do not show, as he said, on post-mortem in the findings of cerebritis or meningitis, but are expressions of a pneumonia toxæmia. That has been peculiar in the pneumonias of the last year or so. I have seen several cases in consultation that were diagnosed as meningitis that developed and were pneumonias.

Another feature I would call attention to is that recently I have seen a few cases in which there was abdominal pain associated with pneumonia. Many of these patients will have a pain which also simulates a case of appendicitis when the real pathology is in the lungs. So I think we should consider that these pneumonias are not frank pneumonias. We have had this year particularly a number of cases in our clinic, but they were not the frank pneumonias of our fathers and text-books, hence we should be cautious to examine our cases very carefully and see whether or not these various features to which I have called attention may not be behind, not a frank pneumonia, but an irregular and possibly mixed infection pneumonia.

DR. G. D. LEQUIRE, Grainger: I have not risen to discuss this paper, which was an excellent one and brought out a great many things that are true in connection with pneumonia. But the essayist laid a great deal of stress upon the pneumococcus as being the cause of all pneumonias. I agree with Dr. Witherspoon that we are confronted many times with a mixed infection, although I have no doubt a great many pneumococci are in the lung.

I have had several cases this winter following whooping cough and measles and grip in which I thought the infection was due probably to those diseases, and while it was principally broncho-pneumonia, we did not get the typical signs of frank pneumonia. Those are hard cases to handle

where they have whooping cough and measles as complications of pneumonia and influenza.

I had a great many cases last year with the grip, some of the worst cases I have ever seen, as it took them a long time to recover. I recall one case that lasted somewhere in the neighborhood of thirty days and finally died.

So far as the treatment is concerned, most every man has a different treatment for pneumonia. There are a few things I would like to add to the paper, and one is with reference to changing the position of the patient. The position of the patient should be changed often. Many patients with pneumonia want to lie on the back most of the time, and in this way they get up a hypostatic congestion of the lung, and by changing them from side to side and in different positions it helps the circulation in the lung, and therefore will help to get the patient better.

The pain that accompanies pneumonia is very troublesome, and the administration of an opiate will quiet the nerves and relieve the pain and do the patient great good, although it is contraindicated because it locks up the secretions, but I think that the good the opiate produces will overcome the bad effect it has upon the secretions of the system.

DR. OUGHTERSON, Nashville: I have been very much interested in Dr. Witherspoon's remarks referring to not having seen clean-cut, frank pneumonias this past winter. That has been our experience. I do not recall having seen a single case of clean-cut, frank pneumonia that ran the usual course with crisis and termination. The majority of them have been of insidious onset, or if the onset has been ushered in with a chill it has been of the migratory type. A few have terminated by crisis; that has been the custom. Another striking feature of the pneumonias I have seen this season has been the low temperature, with a low leukocyte count, both of which are always a bad omen in pneumonia. While the patient may recover with both, still both makes a bad outlook.

As to Dr. Eggstein's explanation of the virulence of the disease, I think it will apply under many circumstances. The difference in strains of the organisms will apply to all infectious diseases. It is common knowledge that acute infectious diseases are self-limited and curable by nature's methods, that is, by the manufacture of antibodies which eventually destroy the infection, and in practically all cases we may say that the outcome depends upon the virulence of the infection and the resistance of the individual. That applies to nearly all infections.

The question of treatment has been a great problem in my mind. I have had some experience in treating pneumonia. I have treated pneumonia cases after one method and another, using different methods in different cases. After all is said and done, if one will go carefully over the results of his treatment, he will frequently ask himself the question of whether he has done any good or not. While careful attention to elimination, with fresh air, securing sleep, giving a nourishing diet, are all important features in the treatment and care of pneumonia patients, every now and then we read of most encouraging reports about the administration of quinin in the treatment of this disease, but which seems to have fallen into disuse. Again, another theory advanced is in favor of giving large doses of camphor oil, and while this has been practiced by some physicians, we do not hear of it again for a while. Still another thing advocated is the use of vaccines. I was a great enthusiast over vaccine. I worked one winter during the daytime and at night on making vaccines for use in these cases, and their use seemed of great value, but as I went on and summed up the cases, it appeared to me we had about as good results without vaccines as with them. As some of my cases had their crisis in two days before they got the vaccines to work, I began to think that the early crisis was due to good luck rather than to the vaccines.

The treatment of pneumonia is one I am still interested in. Doctors speak of strychnin and some say it is a valuable drug in pneumonia; others say it is not a heart stimulant. Experimental investigations seem to show that it is not a heart stimulant, but we give doses of digitalis to stimulate the heart. Investigations and experiments go to show that you have to give digitalis for nearly twenty-four hours before you get any effect from it.

Dr. Eggstein called our attention to the number of cases of pneumonia that were found post-mortem and overlooked clinically. It is common in post-mortem work to find that terminal pneumonias are exceedingly common in many diseases. In compensating hearts, when you have passive congestion and rattling rales over the base of both lungs, terminal pneumonias are common. They are common in kidney disease and many long-standing infections, and the physical signs do not come out in these cases like they do in cases of frank lobar pneumonia, and I think it is a common thing for practitioners to look carefully for it in the physical signs which are wanting.

DR. CAMPBELL (closing): I thank the gentlemen for the liberal discussion they have given this subject. I have nothing further to say.

INFANT WELFARE WORK IN NASHVILLE.

By WILLIE FRANCIS ACREE, R. N.,
Bureau of Infant Welfare, Nashville City
Health Department.

Infant welfare work for the conservation of infant life implies the use of every factor bearing on this important subject. A proper understanding of the forces that go to make a high infant death rate and the knowledge, or rather the wisdom, that will enable us to use the means to counteract conditions that so predispose will help us to bring about conditions that are conducive to being well born, and will help in the conservation of infant life. Any endeavor not so directed and which does not bear on all factors concerned in infant welfare will only partly succeed. It will only be through thorough co-operation on the part of the individual as well as of the community concerned in the use of proper measures that we can begin to approach the subject with the assurance of success, whether it be prenatal care, obstetrical clinics—through which can be eliminated the undesirable mid-wife proposition—hygiene of the newly born, improvement of the milk supply, proper feeding, environment, housing, economics, employment, eugenics, laboratory aid for diagnosis and supervision, etc.

According to the report of the Department of Labor, Children's Bureau, published in 1916, twenty of the largest cities are reported as having distinct divisions or bureaus of child hygiene as branches of the city health departments. Nashville's health department is one of the number, in which a bureau was established in the year 1910. Only two other cities are reported as doing work along this line through their health departments prior to 1910. New York City began this work in 1908; Detroit, Michigan, in 1909. Philadelphia and Buffalo began the work in the same year as Nashville, 1910. Toledo, Ohio, is reported as having established a division of child welfare as late as 1915. Of course you will understand that I am only speaking of this work in cities where it is a part of, and directed by the health departments of the municipalities and am not attempting to name private or civic organizations engaged in this work. As

I have been connected with the infant welfare bureau in Nashville since its establishment and am familiar with its organization, growth and development, I can possibly with more profit to this Association devote this paper to a discussion of the work as we have it here.

We believe it a duty of the Government to supervise and conserve creative forces and give protection to the creature to the end that a desirable citizenship may be produced and maintained, and that it is more incumbent upon the Government to make provision for prevention than to provide cure and correction, and so have organized our work more on lines of prophylaxis, giving, however, the necessary service where preventive measures have either not been applied or have failed.

Tennessee has had the model vital statistics law only since 1913 but prior to that time Nashville and three other cities in the State had local vital statistics bureaus. Having access to the records of births and deaths and being able to interpret their contents is one of the essentials of infant welfare work, as these records are both a guide and mile stone of necessity and efficiency. We must not only know *when* and *where* babies are born, but unfortunately often must know when and *how* they died before constructive prevention and correction can be put into effect. The infant welfare nurses of the City Health Department have access to these records, which, as you know, must be treated in many instances as confidential information, many of the birth certificates not being open for public inspection. These records determine largely the scope of the work done by the nurses.

We do prenatal work which may be defined as instruction and care of the prospective mother in the hygiene of pregnancy. We have also extended prenatal work through co-operation with Vanderbilt University and hold prenatal clinics in the welfare stations under the direction of the Chief of the Maternity Department of Vanderbilt, giving these prospective mothers the advantage of medical care and supervision during pregnancy and providing for their delivery, either in their homes or in Vanderbilt Hospital, where they have professional attention of two members of the senior class supervised by the chief of the department. If they are delivered in their homes, linens are supplied through loan

closets maintained in the welfare stations. Toilet articles and prophylactic outfits are also supplied. As to whether they remain at home or go to the hospital is optional with them, provided no operative procedures are necessary. In the past two years we have supervised and cared for something over 400 of these prospective mothers, and it gives me great pleasure to tell you that we had not a single case of eclampsia, only one case of puerperal infection that was of any importance, no immediate infection of the newly born, and but few that were secondary. This speaks well not only for the nursing service, but it especially indicates that the prenatal and obstetrical care given these mothers by the chief of the clinic and the young men associated with him has been not only conscientious but efficient.

I would like to say just in this connection that Nashville has no law for the licensing or regulation of mid-wives, but they have been regulated, in fact, practically put out of business by the close observation given them by the health department through the nursing force. Most of the work formerly done by them is now done through our obstetrical clinics. You will see how beneficial this has been when I tell you that as late as 1909 about 33 1-3 per cent. of all births reported to the health department were made by mid-wives, while at the present time less than 6 per cent. of the total births are so reported. If you are familiar with the qualification and character of the mid-wife as she exists in the South, you will readily recognize that if the health department was doing nothing more for infant welfare than prenatal and obstetrical work, it would be a very valuable institution to the community.

We also render the necessary material aid to these prenatal cases, co-operating with the County Charity Committee and various civic organizations, and frequently make arrangements to have the expectant or prospective mothers relieved of drudgery and heavy work and try to conserve their vital forces and strength, and, so far as possible, improve their environment, hoping to give the expected infant a better chance not to be prematurely born and to give it a proper start in life.

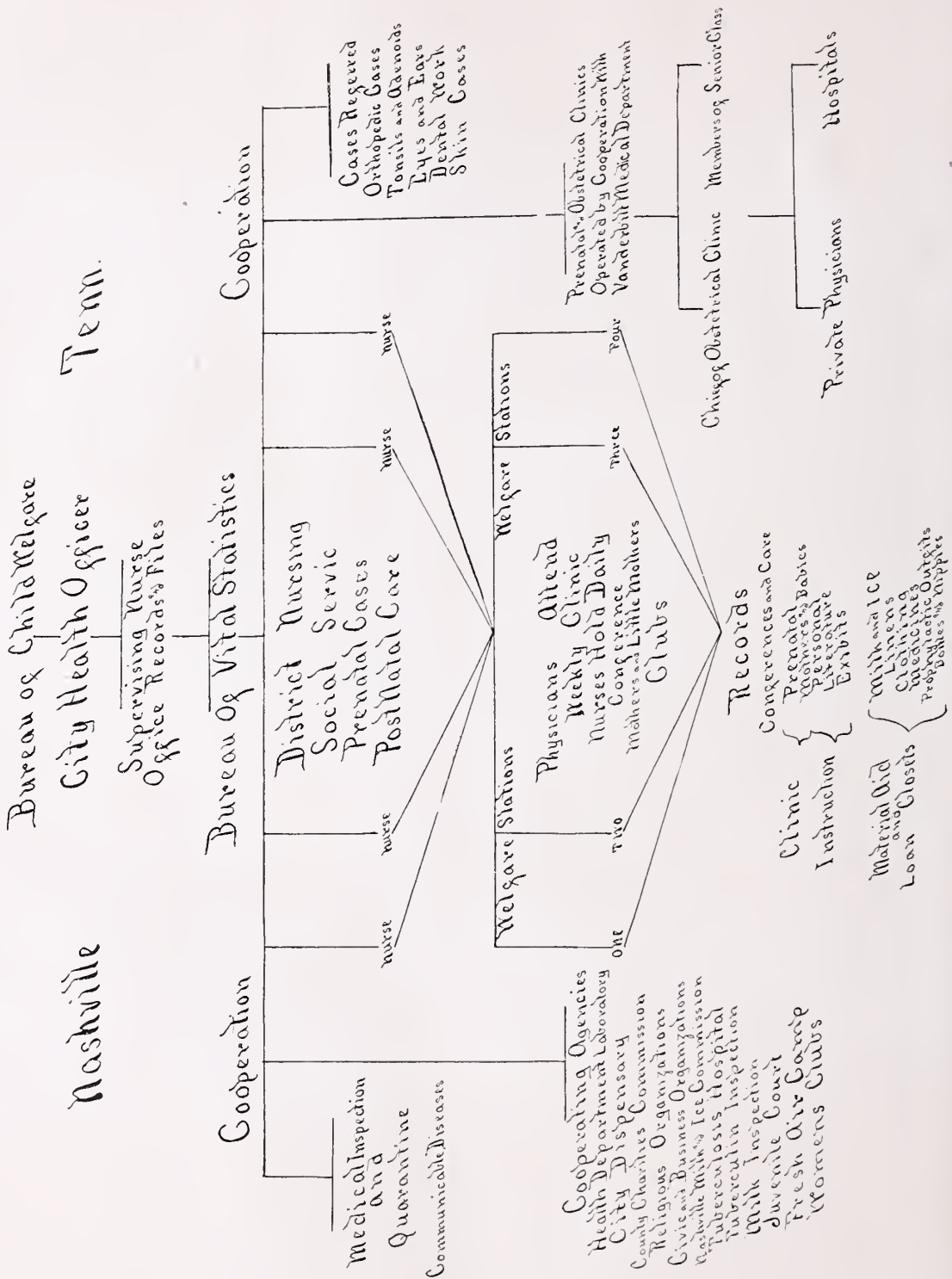
Care and Hygiene of the Newly Born.—General instruction and supervision as to clothing,

feeding—especially the encouragement of breast feeding—bathing, habits and general care is given both by personal instruction and literature and a special effort is made to see these infants as soon after birth as possible. Each nurse is instructed to give special attention to births reported by mid-wives and those reported by physicians where economic and social conditions are poor, and unless they are absolutely certain that proper precautions have been taken to use the silver nitrate or argyrol for the prevention of ophthalmia. Each nurse carries these solutions and is ready for the emergency. In the event the case is seen too late—which, I am glad to say is seldom—and the eyes are found inflamed, a smear is made and carried to the laboratory of the health department to determine the nature of the infection.

Nashville and, in fact, the State of Tennessee is to be congratulated upon having one of the best and most stringent laws governing the prevention of ophthalmia in the United States. This law is known as Chapter 52, Public Acts of 1915, House Bill 366. While I can't speak personally for the rest of the State that ophthalmia in the newly born has materially decreased due to this law, I can speak authoritatively for Nashville, and it gives me great pleasure to state that it has become a very rare occurrence.

One of the first things done for reduction of infant mortality in Nashville was the securing of an ordinance governing and regulating the sale of milk. Following the enactment of this law and through the social activities of the infant welfare nurses, a very marked decrease in deaths from diarrhoea was shown—possibly as much as could be hoped for where the underlying principles of sanitation and improvements of environment had somewhat lagged.

A great deal of work has been done and much is yet to be done in the elimination of specific diseases that have a direct bearing on the production of still births and infantile debility. This is a very important problem and one very difficult of solution. Of necessity, it implies correction of conditions not operating to eliminate hereditary taints and tendencies. Much of the corrective work done by infant welfare bureaus must have to do with the control of tuberculosis, syphilis and other social diseases. No organization has succeeded in working out a plan



for the elimination of the above mentioned factors. If this could be done and the proper environment given, labor and economic conditions improved, the results of our efforts would be greater and much more could be accomplished for the prevention of infant mortality.

Welfare Stations.—The City Health Department co-operating with the Council of Jewish Women, Warioto Settlement, Wesley House, East Nashville Milk Commission, and a society formed by the ladies of various churches of East Nashville, maintains four welfare stations, these

being located one in each of the grand divisions of the city. A nurse is in each one of these stations from 8 to 10 o'clock daily. Conferences are held, babies treated, instructions given and in some instances material aid supplied. Just in this connection I would like to say that milk is furnished and given to the mother or baby where necessary. A fund is placed by the City Commission and the Nashville Milk and Ice Commission with the County Charity Commission. This Commission, upon recommendation of the welfare nurse, orders the milk and ice and sees to it that the family receives it. We have found it best, we believe, to have this milk and ice delivered in the home, where the milk is modified and used under the supervision of the nurse. In the beginning we made most of the modifications in the welfare stations and had the mothers to call or send for a day's supply, but found that this entailed much labor on the nurse as well as a hardship on the mother or some other member of the family. Also, we believe that in giving the mother some responsibility, of course being carefully supervised by the nurse, that we would be doing them a greater good. We see no reason yet to regret or change this method. A home modification can be very simply and efficiently done without any special equipment and only implies careful attention.

Once a week a clinic is held in each of these welfare stations, a physician being in attendance. Mothers are required to bring their babies on these clinic days and, unless they have some good excuse for their lack of co-operation, they are told that we cannot give our service where it is not appreciated. We find, though, at this time that we have very little trouble in securing good attendance at these weekly clinics. The mothers like to see their babies weighed and the records kept of them and, no doubt, through these clinics there is instilled into the mother the ambition to raise a robust and healthy baby.

Mothers' and "Little Mothers'" clubs form a part of the activities of our infant welfare work and it is gratifying to have the assurance that the future generation, to say nothing of the present, will be better prepared to save the babies because of the activities of the infant welfare nurses.

District Nursing.—After 10 a. m., with the exception of the hour from 11 to 12, at which

time each nurse reports to headquarters, files her report and prepares for the next day's work, visiting nursing is done. An effort is made to see each mother and baby in the home, and by social service, combined with the general duties of district nursing, these families are instructed and encouraged and an effort made for their social uplift and betterment. I have not gone into minute details of any phase of our infant welfare work, but have attempted to outline in a general way the activities of our organization and in closing this paper I desire to make the following suggestions:

First—Infant welfare work is essentially a duty of an organized public health service.

Second—The foundation of infant welfare work is necessarily vital statistics, and it is essential that the operations be expressed in a system of well kept records that are simple and easily interpreted.

Third—Any organization doing infant welfare work that does not recognize prenatal care and some form of obstetrical care fails to use the very foundation of prevention and loses a golden opportunity in infant conservation.

Fourth—The general activities of the nursing service demand the operation of welfare stations or health centers and the key-note of progressive and constructive work lies in so helping and instructing families that they are not pauperized and made more dependent, but, on the other hand, are helped to help themselves and so have inculcated into them not only the understanding, but also the desire to give personal co-operation and effort that will, in a sense, make them active missionaries for the betterment of mankind.

Fifth—It would be impossible to outline the many opportunities of the home visiting service. A nurse with sympathetic understanding who possesses initiative will find many opportunities to help and, perhaps, can do better work when not tied down by "red tape" or iron-clad rules of procedure.

Sixth—While proper feeding and a pure milk supply is desirable, we must not forget that it is only one of the essentials and that success lies in the use of forces that help to remove any and every cause that interferes with proper growth and development.

Seventh—Educational efforts through literature and exhibits are good and help to reach a

larger number, but we believe the greatest permanent good is done by actual contact of the nurse with the people, who by example and by precept can teach the needed lessons more effectively.

MORPHINISM.*

By MARGARET O. DAVIS, M. D.,
Nashville.

In ancient mythology, both Greek and Roman, we have ample proof of the early existence and use of the poppy juice. Nero's physician used a compound composed of thirty-six ingredients, poppy extract being the active principle. Hippocrates was familiar with it and all the herb doctors of his period assigned to it a prominent place in medicine. So did Galen, a learned physician of a somewhat later period. We discover that the philosopher, Plato, is the pioneer in the long line of opium-eaters.

The juice is obtained from the unripe capsules of the flower; the greater part of our supply comes to us through English markets, from India. In reviewing old literature I find that opium was in a fair way to become a national habit in America, at one time, had it remained on the free list. It was very cheap; but in 1869 went up to \$17.50 per pound, and \$11.50 per ounce for morphine. The opium-mania was not restricted to the cities; every village had its alcoholics, also its miserable slaves to opium. The druggists had their lists, the physicians, the country grocers carried their opium in stock.

The history of morphinism past and present is in some respects strikingly similar. It continues to be a problem as it was many years ago. From India it was introduced into China, the custom of smoking prevailing and confined to the people of fortune at first; but later spread to all classes, until it became necessary to enforce stringent legislation against the importation of the drug. We have the advance in price, though, from a different cause; the public's attitude toward the victim remains the same for the same reason—ignorance of the disease.

Coleridge, the poet and genius, himself as well as his friends regarded his disease as a

vice; he became addicted by first taking small quantities for the relief of pain, being so advised by a friend. Later, his daily ration became a pint of the tincture of opium. He made many futile attempts to abandon the habit, and, after a failure we have him exclaiming in the agony of his desperation, "Hope now there is none"—I am but the wreck of what you once knew me, rolling rudderless". He earnestly requested that after his death a narrative of his wretchedness and its guilty cause be made public, that some good to humanity might result from his direful example. Thomas DeQuincey, like Coleridge, became a victim by first taking laudanum, on the advice of a college acquaintance, for the relief of pain from which he had been suffering for many days, and he also made many attempts and as many failures to relinquish it. We have the pathetic case of Robert Hall, famous in literature and John Randolph, of Roanoke, the poet statesman. Morphinists soon cease to obtain any pleasure from indulgence and long to be free, but fear their suffering too much without the drug for any voluntary effort at abandoning it to be successful. The danger of collapse and death is not theoretical.

The responsibility for the eradication of morphinism rests with the physician. The medical profession should come forward with courage and ability and teach the laity that morphinism is a chronic intoxication and must be treated as such. The victims do not deserve to be turned over to the police, but are in the direct need of scientific and humane treatment. It is a reflection on the intelligence of our cities that they are allowed to be treated as they are at the present time.

The narcotic may have first been administered by a physician to save life or alleviate pain, or taken upon the advice of a friend. If small doses are repeatedly taken it is easy enough to drift into morphinism almost unconsciously. No physician, however, prescribes morphine long enough for the patient to become habituated; but the patient himself, if he knows the name of the drug the doctor gave to relieve him, will the next time he suffers in a similar manner, act on his own advice, which costs him nothing, and repeat the doctor's remedy. Remember, too, that until recently the sufferer had only to step

*Read at Annual Meeting of Tennessee State Medical Association, Nashville, April, 1917.

to the corner and purchase his opium or morphine tablets, just as he did his tobacco. If he does this often enough he soon finds that he must continue it not from choice, but of necessity.

It is a positive crime for a physician to give a hypodermic of morphine in any recurrent chronic disease. Constitution and social position render none immune. With morphinism well established, the victim can no more throw off his disease by any effort of will-power than the typhoid or pneumonia patient can his. Their efforts at cure having failed time and again, ruin is all they see in the future for themselves; without home and friends in their helpless depression, in poverty and illness, they are picked up on the streets by the police authorities and the way they are afterward handled by the law and fined—think of the very inconsistency of it. Could some philanthropist be induced to establish an institution for their cure, wealth could not be devoted to a more humane cause.

It does appear that a city or rich county could support a few wards at some hospital for these emergency cases, at least until they could be entered into some charitable institution.

Morphinism has always prevailed to a greater extent in England among all classes than in America. Fifty years ago there is said to have been eighty or one hundred thousand habitues in the United States. While it is not a development of recent years by any means, recently—until March, 1915—it was increasing to an alarming extent among the young people of the cities, especially, and by means of the most pernicious method, the hypodermic syringe.

The National Government realized its use must be restricted, so there was passed the "Harrison Anti-narcotic Law," which is a thoroughly prophylactic measure. A few decades hence and the drug addict as seen on the streets today will be a medical curiosity; but the law is very hard indeed on present addicts, those who are poor, and some provision should be made for them. New York is the only State in the Union that has as yet provided for them. The legislature of that State appropriated \$100,000 for a building and purchased a farm of 750 acres where they can recuperate after the final removal of the drug. Understand that this alone does not constitute a cure; they are left

in a nervous abnormal condition, with a craving for artificial stimulation; that time and proper treatment and, most important of all, inability to procure the drug will eventuate, in the majority of cases, in complete restoration of health and efficiency.

The situation as we have it here at the present time is very much more favorable than at any previous period for the successful treatment and ultimate cure of the morphinist, owing to the untiring efforts of Mr. C. R. Frazier, of the Internal Revenue Department, who has worked day and night to bring about this condition.

The theory of hereditary predisposition dates from the days of Plato, Aristotle and Hippocrates, if indeed the germ of the same be not found in the story of "man's first disobedience". That some people will become morphinists under circumstances that others with greater nerve force will resist is just as true as that some families are more susceptible to respiratory diseases and others to the arterial degenerations, etc.

If organic function be tied up indefinitely by the use of the opium derivatives it results in chronic poisoning to which the system acquires tolerance; but all the functions are perverted, a change in metabolism ensues, nutrition suffers, but in so much as it is a functional disease, it is curable.

While there is a general similarity between all diseases, each one presents its individual characteristics and for that reason there can be no successful routine treatment for morphinism. All therapists are agreed that the only rational and humane method of treatment is the gradual reduction method, and this was successfully practiced many years ago very much as it is today. The *Lancet* of 1851 reports a case successfully treated in this manner in private practice, though it continued over several months. The *American Journal of Medical Science*, of about the same period, reports an interesting case of a physician who, suffering with hypochondriacal depression, resorted to morphine for relief and after six years of use found himself a monomaniac with health destroyed. A quart bottle was filled for him with a mixture of morphine and water, which he was directed to take systematically, each dram corresponding in strength to his accustomed dose and as often as

he took a dram, one dram of water was substituted. This continued for twenty-two weeks, by which time the invalid's health and sanity were restored. I could report a number of other authentic cases that were cured. The same drugs that are used now were used for the relief of symptoms fifty years ago; they had no so-called specifics.

In later years there have been many treatments exploited, though none of any special merit. The co-called "Town's treatment" is written up by the author Alexander Lambert, M. D., in Osler's and McCrae's *Modern Medicine*. Such excessive purgation as is advocated in this treatment is irrational.

The up to date sanitarium, if the patient is able to afford its service, is always to be preferred. The patient should, after his dismissal from the sanitarium, remain under his family physician's eye for some time and be suitably employed; if such precautions were observed there would not be so many relapses. The greater number of these patients must get cured as best they may. Even if they so desire they cannot always gain admittance to the asylum, so it is necessary, owing to the law's restrictions, that many be treated in private practice. It is easy enough to treat the better class; but the poor are almost impossible; because of insufficient food of a poor quality which is a great force in their diseased condition. Sufficient food of a nourishing quality, that is easily assimilated is absolutely essential as well as to remove the drug, to restore them to health.

To be successful the physician must understand his disease and his patient, and the latter must have confidence in his physician's ability to cure him. He knows his own pathology and readily recognizes ability or incompetency in his physician. These patients must always be encouraged. Do not mock their misery and increase their agony by talking to them of will-power. The cravings of the system for morphine are beyond the control of the will. You would not refuse the hungry man food nor the thirsty one water; so these patients must be supplied with morphine according to the system's need as long as there is a demand for it. When their general health improves and they can eat and sleep, there is not such a craving for the drug, which usually is only an indication of body

need, according to the theory of Dr. Ernest Bishop, Clinical Professor of Medicine of the New York Polytechnic, who teaches this branch of Medicine; in my experience I have found this to be true.

Morphinism is difficult to treat, and requires an unlimited amount of patience on the part of the physician. Many of the victims are fine characters and their gratitude, and that of their families ever afterward, if we cure them is very pleasing.

DISCUSSION.

DR. J. W. SANFORD, Ripley: The essayist has presented a very interesting paper, and she struck the keynote as to the treatment of the morphin habit. I have been treating a number of cases of morphin habit and whiskey habit for several years. I can cure any man of the whiskey habit in three or four days, but it takes years to cure a man of the morphin habit. They are two different diseases, if I may call them such. They have quite a different effect on the nervous system. Morphin destroys all the will power. The majority of people sent out of sanitariums for the treatment of the morphin habit are not cured. They only drift back.

Morphin has hit the medical profession harder than it has any other class of individuals. The doctors are largely to blame for making morphin users. We perhaps are guilty. I do not think I ever made a morphin user. I hope not, but, it seems to me, when this narcotic law went into effect it was in the hands of the medical profession, and I believe they were all more or less affected by it in treating their patients. You can not cure these patients by the gradual method. I cured a lady two years ago by the gradual method who had been using morphin for thirty-four years. She stayed cured eighteen months and then died in January from lobar pneumonia. In the country districts they can do that, but in the city they can get morphin. I have been told that in some cities they have men who charge a fee for writing prescriptions for morphin. I do not think any honorable medical man ought to write a prescription for a stranger for morphin. (Applause.)

DR. J. M. CULLUM, Fayetteville: In regard to the use of morphin and the control of the habit, the gentleman who just preceded me, Dr. Sanford, stated that the doctors have suffered more than anyone else, and I agree with him fully. In my county, the county of Lincoln, town of Fayetteville, the medical society agreed at the beginning to the enforcement of the narcotic law, that the effectual way, and in fact the only way to control the morphin habitues was to place the prescribing of the drug for addicts in the hands of one man, and that misfortune fell to my lot.

In the past two years I have had quite an experience in the treatment of morphinism and I flatter myself that I have accomplished some good along this line. In fact, in the last twelve months I have cured seven patients of this habit.

I have one method only and it has proven a success in my hands. First, you cannot take a person off of the morphin habit, or at least I can not, if you allow them to use the drug in the powder form or the morphin sulphate. Second, we must realize that the habit is as much mental as physical, and, in fact, I believe the mental the more powerful factor. To illustrate the mental feature, I will briefly mention one case, I was called to see a patient suffering from a decayed tooth and apparently almost having convulsions. The dentist was present, having received the first call and on account of the intense suffering, as he thought, he refused to extract the tooth unless I was present. I suggested to the dentist that the patient wanted morphin and that I would show him that her mental attitude was affecting her more than the tooth. I therefore gave her a hypo of clear water and assured her that within six or seven minutes she would be perfectly relaxed. Before the time had elapsed she was relaxed perfectly, not a rigid muscle in her body, and the dentist extracted the tooth.

I force all of my patients to use morphin in the tablet form. I do this for the reason that all tablets are the same size in bulk whether they be one-half grain or one-fiftieth grain.

This is the plan I have adopted and I attribute my success, if indeed I have been successful, to this plan. A patient taking thirty grains per week, my first prescription is for sixty half-grain tablets, assuring the patient that this is the definite amount they have been taking per week. My next prescription is for fifty half grains and ten quarter grains, making a total of sixty tablets, this number of tablets in each case lasting one week. I thus reduce from halves to quarters, and in like manner I reduce from quarters to eighths, and so on until the patient is taking sixty fiftieth grain tablets per week, and finally I reduce to nothing but sugar of milk tablets. I have found this method to be successful and feel sure in saying that any patient who wants to be cured can be by this method. I must say, however, that morphin addicts are unreliable in their statements in regard to the amount they are using and will secure the drug anywhere they can. It takes organized effort on the part of the physicians to make this method effective, and I insist that in small towns the size of mine that one physician and only one be allowed to prescribe the drug. I believe there is no other way so effectual except a sanitarium,

and I have no patience with the quick cure methods as advertised by some sanitarium, having witnessed some sad results from such quick treatments.

MALARIA.

A "Malaria Conference" was one of the outstanding features of the meeting of the Southern Medical Association recently held at Memphis. This conference was the outgrowth of the formation of a National Committee on Malaria Control and was presided over by Assistant Surgeon General H. R. Carter, U. S. P. H. Service, a man whose name stands out in the history of the fight against yellow fever and malaria in the Western Hemisphere. The attendance was large, the hall in which the conference was held having been filled for the whole time. The thing that was definitely shown at this conference was this: Malaria can be controlled, not only in Panama, but also right here in the South. Bass and Derivaux and Leathers and Garrison, and LaPrince told just how it has been done in Mississippi and in Arkansas. Carter and Krauss and White and Hoffman, and others whose names do not now come to mind told how it has been and can be done and made most instructive talks on the great problems involved. It is not going to be easy to do; it is going to take time and money, a long time and lots of money; no one method of attack is going to avail singly; but malaria can be controlled here in the Southern United States. Study the reports of the Malaria Conference when they are published.

INSTRUCTIVE MISTAKES.

Under this heading, the British Journal of Surgery gives, monthly, some cases from leading men where failure has taught a wise abstinence in the future. It were to be wished that American writers would not confine themselves to relate only their successes, but would have the courage to tell us the ineffectual and hurtful. It is sometimes almost as useful to know the laudentia as the juvantia, and a doctor or surgeon of great experience might make a very useful paper by giving an account of such methods which he has found useless and inconvenient.—Southwestern Medicine.

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EDITORIALS

MEDICAL ADVISORY BOARDS IN CONNECTION WITH THE SELECTIVE SERVICE.

The following paragraphs from a letter from the Provost Marshal General, U. S. A., to the American Medical Association, of which the Tennessee State Medical Association is an integral part, is an appeal which has met prompt response by the appointment in the various States of Medical Advisory Boards, the duties of which are explained in the Provost Marshal's letter:

"We need the active and vigorous co-operation of the American Medical Association. We need the promptest and most thorough action in this regard. Will you not call together a sufficient number of your executive council to authorize this co-operation by the Association, and to consider a definite and concrete proposition which can be presented here, and upon which we can act?"

Specifically, the co-operation desired of the Association is set forth in the following:

"It is planned to establish Medical Advisory Boards, not necessarily integrated with the territorial jurisdiction of either Local or District Boards, but having headquarters with sufficient apparatus and conveniences so located as to be accessible to boards in the portion of the state in which the Advisory Boards are situated. Any case in which the local examining physician has held the registrant disqualified for service (unless the disqualification is obvious) or in which the local physician is in doubt, or in which the registrant feels aggrieved by the decision of the local physician, or where the Local Board or the Government Appeals Agent desires to appeal the findings of the local physician, is to be sent to such Medical Advisory Board for an exhaustive (medical) re-examination upon which the Local Board can proceed to a final determination."

For Tennessee these Medical Advisory Boards have been chosen to the number of about sixty. Each board is composed of four men, one of whom is qualified for examinations of the eye, ear, nose and throat, one for laboratory exami-

nations, as of the urine, sputum, etc., one for for general physical examinations, and the fourth for more strictly surgical service. The men selected for this duty will be notified of their appointment in due time, if indeed they have not already received official notification. The duty for which they have been chosen is of the utmost importance and in its performance can be given to the Nation a most helpful patriotic service which will go far to insure the success of American arms in the great struggle for human liberty.

The purpose of these advisory boards are, in part, that every man selected in the draft shall have a "square deal"; that the enormous expense of transportation to cantonments of men who are there found physically unfit may be saved; that the patriotic men who have already done such a splendid work as members of exemption boards may have the helpful advice and support of capable physicians who can sustain or recommend rejection of their findings and rulings on the physical fitness of drafted men.

The drafted men can appeal to the advisory board; the physician on the exemption board can, if in doubt, ask for the help of the advisory board; the appeals agent of the Government can ask that any drafted man be subjected to examination by the advisory board. Thus all parties are protected and all parties are helped to the best possible solution of any question which may arise in connection with the operations of the selective draft.

It is said that from 17 per cent. to as high as 40 per cent. of men selected in some counties and forwarded to cantonments have there been found, upon re-examination, to be wholly unfit for military service, and thus the Government has been put to enormous expense and the men themselves have been done most serious injustice. The advisory boards can and will prevent these things.

The medical profession of Tennessee will meet this new demand upon it cheerfully and effectively.

TENNESSEE IN REGISTRATION AREA.

The Bureau of Census at Washington, after a rigid test to determine the completeness of registration, has admitted Tennessee into the

"registration area" of the United States. This applies only to registration of deaths, for only in a very few States has the registration of births been perfected to a degree which entitles them to admission into the birth registration area of the Bureau of Census.

Tennessee is the twenty-fifth State admitted into the registration area as it is now constituted and in its admission a real achievement has been accomplished by the Bureau of Vital Statistics of the State Board of Health. Dr. H. H. Shoulders, State Registrar, upon whom the duties of organization of the Bureau devolved, and who has been in active charge of the administration of its activities, gives the credit for the accomplishment to the local registrars and makes due acknowledgment of the unselfish service of the doctors of Tennessee, which has been so largely instrumental in making death registration complete enough to entitle the State to admission into the registration area. To Dr. Shoulders, however, should be given great praise for the ingenuity and executive ability displayed by him in perfecting an organization and directing its activities to the final achievement of most splendid results. There have been many obstacles in the way and to administer the provisions of the vital statistics law has been no easy task, but the State Registrar has patiently and persistently followed the path of his duty so plainly laid out in the law, until now, after less than four years, the efficiency of the organization and the soundness of the policies pursued has been demonstrated and the efforts put forth have been rewarded by the full recognition of completeness of death registration in Tennessee by the Bureau of Census.

The enactment of the "Model Vital Statistics Law" into the law of Tennessee, in 1913, was a distinct accomplishment. The decision of the Supreme Court by which the constitutionality of the law in practically all of its essential provisions was clearly and finally established, in 1917, was a distinct triumph. The admission of Tennessee into the registration area is a distinguished accomplishment, especially so in view of the fact that the test made by the Bureau of Census to determine the completeness of registration was extremely rigid.

The benefits which have already accrued to the State from the operations of the vital sta-

tistics law have been large and will grow in magnitude as the years go by. These benefits have been received by the State because here, again, the doctors of Tennessee have shown their willingness to contribute to the public welfare and have carried out the obligations imposed upon them by the law of the land and by virtue of their membership in the profession of medicine. Now that the State has been taken into the "charmed circle" of registration States, the co-operation of the physicians of Tennessee is more necessary than ever and the obligation to continued contribution to the success of vital statistics rests more heavily upon them than ever before. Recognizing the vital importance of death and birth registration, the Journal would appeal to the very few physicians who have withheld their co-operation for their active assistance in making registration even more complete and helpful to the State. To those who have cheerfully and willingly contributed in such large measure to the success that has been attained, the Journal would offer commendation and would bespeak their continued co-operation, to the end that vital statistics in Tennessee may be perfected and enlarged and brought to fully serve the great purpose of the conservator of human health and human life.

THE TRUE SITUATION.

If one has had the conviction that the winning of this war must follow just "as a matter of course" because the United States and France and England and Italy and Belgium and other nations are allied, he has but to hear from the lips of men who have been in the struggle on the lines in France their story of what they have seen and what they know to have such conviction destroyed. Those who heard Colonel Goodwin, of the British army, and Colonel Derclé, of the French army, tell their stories at Memphis now know that the true situation is just this: The struggle is yet to be long and bitter. The enemy is not yet near exhaustion, nor has the morale of the German troops nor the German public been broken. The full weight of America's resources, in men, money and material, must come into play before the end is even near. Medical men are needed for service which none but they can give.

The overwhelming thought impressed upon

the mind of one who has heard these men from the front, especially if he has had the privilege of personal conversation with them is this: Human liberty is at stake!

Every man must serve. To the doctor is left the honor of deciding himself how and where he shall serve. And for the doctor who can serve *anywhere*, at home or abroad as the need may demand, the call is sounding loudest, the opportunities are most abundant and the privilege highest and greatest.

THE RIGHT THING.

About sixty—perhaps more of the members of the Nashville Academy of Medicine, and Davidson County Medical Society have entered the Medical Reserve Corps. At a recent meeting of the Academy it was decided, by unanimous vote of members present, that the names of all members called into active army service should be kept on the roll and that the membership of these men in the Tennessee State Medical Association should be maintained by payment of dues for them from funds belonging to the Academy. This was eminently the right thing. It is to be hoped that all county societies will follow the example set by the Davidson County organization.

If Tennessee's quota in the Medical Reserve Corps is filled, approximately one-fourth of the members of the State Association will be taken from their homes and from their practice. Not one of the names of these men should be allowed to be erased from the roll. Let every county see to it that 1918 dues are paid for all Reserve Corps officers who have gone or who may go to the front.

DR. T. H. MARABLE.

Dr. T. H. Marable, aged 62 years, died at his home in Clarksville on November 12, 1917. Organic heart disease was the cause of death. Dr. Marable was for many years a member of the Montgomery County Medical Society, the Tennessee State Medical Association and other medical organizations, and was widely known among the physicians of this and adjoining States. He had served his community in numerous positions of trust and for several years before his death was Mayor of Clarksville.

THE STATE BOARD OF HEALTH.

Step by step the Tennessee State Board of Health is working its way into wider and wider fields of usefulness and is gradually but surely increasing the beneficial results of its operations. Through the Bureau of Rural Sanitation a large and far-reaching educational work is being carried on and splendid results are being secured in the way of applied sanitation in rural homes and schools. The work of the field men of this bureau is being increased in scope and is producing results of permanent character. The children in the schools are being reached directly through medical inspection and the parents of the children are thus indirectly reached, while direct contact is established with them through personal visits of the field men, through clinics and in other ways.

Through the Laboratory the State Board of Health offers a most valuable service to the physicians and to the people generally. The work of this department has increased enormously and is proving most helpful. In making microscopic examinations for diagnostic purposes, in the preparation of vaccines, in the examination of public water supplies, in investigative work to determine the source of outbreaks of infectious disease, and in other activities this laboratory is rendering splendid service.

Through the Trachoma Hospital at Tazewell, established by the U. S. P. H. Service at the request and through the co-operation of the State Board of Health, opportunity is offered for all who suffer the dire effects of trachoma to find relief and a fine educational campaign is centered in this institution.

Through arrangements with one of America's best pharmaceutical concerns, the State Board of Health has made it possible for the people of the State to secure smallpox vaccine, diphtheria and tetanus anti-toxin and anti-typhoid vaccine at most reasonable cost.

Through the distribution of helpful literature the Board is disseminating information which the people need.

Through the Bureau of Vital Statistics the births of our babies are being legally registered and the deaths of the citizens recorded. Thus many vitally important interests of the people are thus conserved. The administration of Ten-

nessee into the death registration area of the United States, a recent accomplishment, is an event of great importance and a distinct triumph for the State Board of Health.

In other ways the State Board of Health is performing helpful service for the people of Tennessee. Its activities should be and will be extended, for there is yet great opportunity for extension and great need. Our people are dying in too great numbers from preventable disease. There is too much retardation and inefficiency, direct results of preventable disease. Only through the operations of a strong State health service can the necessary helpful information be disseminated, the necessary preventive measures be applied and the necessary restraints be imposed. The State Board of Health is not unmindful of its obligations nor of the existent needs, and hopes to be able to continue the work which has proved worth while and to extend and increase its usefulness until the yearly toll of human life by preventable disease is definitely and permanently reduced.

The medical profession of Tennessee has powerfully contributed to the upbuilding of our State Health Department and, on the other hand, has received large benefits through its service. Their continued and even larger support and co-operation will go far to more firmly establish the State Board of Health as a positive agency for good and to widen and enrich its service for the conservation of human life in Tennessee.

THE SOUTHERN MEDICAL ASSOCIATION.

About 1200 doctors attended the meeting of the Southern Medical Association at Memphis—a magnificent attendance for times like these. The local committees of the Memphis and Shelby County Medical Society handled everything, down to the smallest detail, in splendid manner. The presiding officers, the beloved President, Dr. Duncan Eve, and all Chairmen of sections, discharged their duties in a way that kept things alive and moving. The program in every section was filled with good things and discussion was full and spirited. The programs arranged for the several public meetings were participated in by men who brought patriotic and soul-stirring messages backed up by records of personal

service. Alumni meetings and dinners brought together many who pleasantly renewed the associations of old days and in hotel lobbies and in assembly rooms the smouldering fires of friendship were rekindled and blazed up anew in the hearts of men separated for years by wide distances of location. It was a fine meeting.

There were many absentees who would have been there but for the fact that they were in posts of duty in army camps, in war hospitals or in clearing stations near the front in France. Their influence was more powerfully felt and their names more honored than had they been at Memphis.

Goodwin of the British army, Derclé of the French army, Brackett, Noble, Owen, Page and others of the United States army, Green of the United States navy, Jump, McLester, and a number of others in active service in the Medical Reserve Corps were in attendance at Memphis and their presence was inspiring. The message they brought was—"Your country and her allies need your service".

"Preparedness! Service"! These were the watchwords at this meeting. The whole tendency of the scientific program was for stimulating Southern physicians—internists, surgeons, laboratory workers, sanitarians—toward more efficient preparation in civil or military practice. And the dominant note of the whole occasion was that which sounded everywhere, and which found ready response in the hearts of all who were there, for unselfish patriotic service for humanity.

Tennessee was honored in having this most notable meeting of the Southern Medical Association within her borders. And it was most peculiarly fitting that it should have been held at Memphis—the city which has given a larger share of her doctors to war service than has any other in the nation.

CHEAPER ANTI-TOXIN AND VACCINE.

Some druggists are refusing to handle the diphtheria and tetanus anti-toxins and the smallpox and anti-typhoid vaccines which E. R. Squibb & Sons, under agreement with the Tennessee State Board of Health, are offering the people of the State at prices far below what it has been necessary heretofore to pay for these products. These druggists, we are informed,

refuse to carry the State Board of Health—Squibb products because there is less profit in them than can be made by handling other anti-toxins and vaccines.

The State Board of Health had no purpose in making the arrangement by which diphtheria anti-toxin, tetanus anti-toxin, smallpox vaccine and anti-typhoid vaccine might be secured at prices within the reach of nearly every citizen except just one—that these most valuable agents of prevention might be more widely and promptly used, thus conserving health and life. The State Board of Health would not have made the arrangement with any but a reputable concern manufacturing such products under Government license.

As we see it, the druggist who refuses to handle the anti-toxins and vaccines offered by a first-class manufacturer, with the approval of the U. S. P. H. Service and of the State Board of Health, simply because he can make more money out of other products is not worthy the support of the physicians and people.

There are other good anti-toxins and vaccines—Park Davis and Co.'s, Mulford's, and others—but so are Squibb's products good. If one prefers the highest priced articles and can pay for them, alright. But certainly none should withhold a good anti-toxin or vaccine from the person who cannot pay the high price when it is offered at a cost within his reach.

The Journal appeals to the physicians of the State to help the State Board of Health in its worthy effort to place valuable and effective preventives on the market at a price which will offer the poor man and his child protection against tetanus, typhoid and smallpox and a chance for using diphtheria anti-toxin for its curative effect.

If you cannot secure the Squibb anti-toxin and vaccines at the price established by agreement with the State Board of Health, write to the Journal and the matter will be taken up and an effort made to have them put within your reach.

ARSPHENAMINE — FORMERLY SALVARSAN.

The Federal Trade Commission, on November 27, entered orders for licenses to manufacture Arsphenamin—formerly known as Salvar-

san—to the Dermatological Research Laboratories, Philadelphia, Takamine Laboratory, Inc., New York, and Farbwerke Hoechst Co., New York. These concerns will manufacture arsphenamin under strict supervision of the U. S. Public Health Service.

The price of the American product will be far below that of salvarsan, which was secured only in Germany. The Federal Trade Commission will fix the price and has indicated that each dose will cost the private physician approximately \$1.50, while the cost to hospitals will be less and the cost to the U. S. army and navy still less.

It is thought that the licensed manufacturers in the United States will be able to quickly overcome the existing shortage and that the medical profession will soon have in its hands an abundant supply of Americanized salvarsan.

Arsphenamin—remember the name.

VITAL STATISTICS LAW.

There are those who have not been altogether satisfied with the operation of our Vital Statistics Law, but do not ask its repeal *in toto*; rather would they simplify it and make such modifications as would facilitate its execution and give the remuneration to whom they feel it rightly belongs. No doubt many cases of births and deaths, especially births, are not reported, because nothing is allowed for the trouble of making out the certificate. Unless the reports are thorough, correct, and universal in regard to these matters, conclusions will rest on a false basis, be misleading, and defeat the very object for which they were intended. A very great per cent. of cases in civil practice is incorrectly diagnosed, anyway.

If each doctor or midwife should send his report or birth certificates to Nashville at the end of each month and get the twenty-five cents allowed for his trouble, they would all go in promptly, but as it is, nothing is allowed and carelessness is apt to prevail.

Death certificates stating the cause or causes of death should be more or less guarded and secure from public gossip, which is likely to occur if a local man has the registration in charge with no restrictions. If a man is dead he is dead, and that is enough for the community to know about the particular man. If the causes of death are

in any way related to post mortem litigation, then, under such strained circumstances, if justice is at stake or about to suffer, the record would probably have to be taken from its safe keeping and presented in court; otherwise, do not molest it, except for gathering statistics.

It is not intended to accuse or intimate that any reputable physician in Tennessee would place his signature to a false report in regard to the cause of death, but knowing the many delicate and ticklish circumstances which occasionally "butt in" on these reports, it may be wondered if the report is in the least economic of the truth. These reports setting forth the causes of death should be under the control of the State Board of Health and kept under lock and key in the archives at Nashville, to be revealed only when some legitimate cause demands it. Such would protect the physician and save the friends of the deceased, in some cases, from chagrin. The doctors would have reason to be more complete or unabridged in their reports, a more complete record would be afforded, and statistics would be worth much more. Instead of having a Registrar in each district some would have the Justice of the Peace to attend to the death certificates, for they get very poor pay anyway.

Yes, a correct record is a good thing. The other day I got a letter from a lady in the city of Philadelphia, Pa., asking me for a copy of her son's birth record. Her first son was born in a Western State where vital statistics were kept, and she had no trouble securing a copy of the certificate, though it occurred some years ago; she sent me the copy that I might see just what such a thing was, in case I had never seen one. Her second child was born in Tennessee under my direction; she wanted the record, but none was to be had in full, for such was not required in Tennessee then, and I could furnish it only in part from my book record.

Why all this? The mother lives in Philadelphia now, her husband is in the navy, and she wants her boys to work when not in school, if they can secure jobs, which they can, if a record of their ages can be learned. The law is very strict there in regard to employing children.

A minister's son in my knowing ran off and joined the army, being under age, and I was called on to testify as to when he was born, for I was present then. No record was kept, but

my own son was an infant at the same time and I knew his age; consequently I could testify very nearly to the age of the runaway boy. An exact record would have been better.

In another similar case I was called on to rescue a kid from the army, but I had no record nor any circumstance which I could swear by, so the case had to go by.

I have in a general way a poor opinion of a doctor who will sit around a Recorder's Court and while away time listening to the little frivolous cases often coming up there, but some time ago I fell into one of such where depositions were being taken. The case was one where an estate was to be divided among several heirs. The question of illegitimacy was raised in regard to the eldest son. If it could be proven that this son was born out of wedlock he would lose out. Some swore that the son was so large during the Civil War, and others that he was a little tot after the war, some one thing and some another. Evidence was clashing and clashing almost reaching further than the evidence. The parties concerned were blood-thirsty and their powder dry. Fury would flare up now and then, and angry threats disturb the court. It is not over yet, and loss of life may follow. A well-kept record for reference in all these cases cited above would have settled all the controverted points beyond the shadow of a doubt.

For the sake of justice, future rights, economic adjustments, and future peace between fellow citizens let us perfect our Vital Statistics Law, engrave it on the rocky pages of our Statute Books, and let it stand FOREVER.

J. J. W.

CASUALTIES AMONG MEDICAL OFFICERS.

Medical men are, generally speaking, not of a kind to be easily frightened nor persuaded from the performance of their duty. The agents of the enemy know this, but their knowledge of the fact does not deter them from putting forth every effort to frighten American doctors and, more especially, to frighten their relatives and friends in an attempt to dissuade the physicians of the land from enlistment in the Medical Reserve Corps. The grossest exaggerations are published concerning the fatalities among medical officers at the front. Hor-

rible stories are set afloat in which are set out most absurd and untrue statements about the depletion of the ranks of army surgeons. The dangers of transportation, especially the menace of the submarine, are played up in harrowing style.

The facts are these: Up to June 1, 1917, there had been 259 fatalities among British medical officers on all fronts. The number of wounded medical officers up to the date named was around 1200—including severe, moderately severe and trifling wounds. Not even a soldier, of all the thousands transported, has been hurt by a submarine.

The Germans did kill one or two medical officers in a Red Cross hospital, but this inhuman savagery won't scare American doctors. No more will the tales of the enemy propagandists.

MISCELLANEOUS

THE AMERICAN REVIEW OF TUBERCULOSIS.

Within nine months the American Review of Tuberculosis has made for itself a unique place in medical circles throughout the United States and in almost all parts of the world. Few specialized journals have received a more cordial welcome than this one has, as evidenced by its rapidly increasing subscription list. The large number of medical men who are interested in the treatment and prevention of tuberculosis gives the Review an unusually extensive field.

The American Review of Tuberculosis, however, has an appeal also to those who are not directly interested in this disease, that is to the internists, to the laboratory men, and even to the surgeons who are specializing in related fields. Tuberculosis has many ramifications and is so intimately bound up with the practice of all physicians that this journal should find a ready place in the library of every man who wishes to keep himself posted for his own best interests and those of his patients.

The Review aims to be not only a clearing house for the best American thought and production in relation to the clinical, pathological and sociological phases of tuberculosis, but it aims at the same time to stimulate renewed in-

terest on the part of those who are already working in this field and to arouse interest on the part of the general practitioners to whom tuberculosis does not make a very ready appeal. It is not a propaganda journal but it does frankly aim to be educational as every good medical journal should do.

Its editorial staff headed by so well-known an authority as Dr. Edward R. Baldwin, of Saranac Lake, for so long an associate of Dr. Trudeau, and containing the names of men of such national and international prominence as Dr. Lawrason Brown, Saranac Lake, N. Y., Dr. H. R. M. Landis, Philadelphia, Pr., Dr. Paul Lewis, Philadelphia, Pa., Dr. M. J. Rosenau, Boston, Mass.; Dr. Henry Sewall, Denver, Colo.; Dr. B. S. Veeder, St. Louis, Mo., and Dr. Allen K. Krause, Baltimore, Md., assures those who subscribe to this publication an unusually high grade of material. The further fact that the journal is published by the National Association for the Study and Prevention of Tuberculosis vouches for its standing and gives added the Study and Prevention of Tuberculosis also assurance to its future.

The backing of the National Association for makes it possible for the publishers to furnish the Review at so moderate a price as \$3.00, which, to those who know anything about the cost of production of such publications, will readily appear as less than the cost of production. We are glad to recommend the American Review of Tuberculosis to our readers and urge them to add it to their subscription lists. Subscriptions should be sent to the New York office at 105 22nd St., New York City.

ANNOUNCEMENT TO PHYSICIANS, PUBLIC HEALTH AND SOCIAL WORKERS.

The Metropolitan Life Insurance Company invites physicians, public health and social workers to make use of its valuable collection of mortality statistics.

These statistics present the principal causes of death among white and colored wage-earners in the United States and Canada. The material covers over ten million individuals for each of the six years, 1911 and 1916. Death rates are available for each race, by sex and by age period.

The Company hopes in this way to aid in the study of disease and disability among wage-

earnings. It desires to stimulate medical investigation and research. By offering these statistics to the medical profession and to public health and social workers, the Company expresses also its appreciation of the co-operation which it has received from physicians and others who have replied to inquiries and have given detailed information in thousands of cases. This assistance has helped to make the statistics more accurate and valuable.

All inquiries should be addressed to Statistical Bureau, Metropolitan Life Insurance Company, One Madison Ave., New York City.

NOTES AND COMMENT

Dr. H. L. Acuff, Knoxville, Lieutenant in the Medical Reserve Corps, was ordered in November to report for duty at the base hospital at Tenafly, N. J.

Dr. L. F. Barker, Professor of Clinical Medicine in Johns Hopkins, was made President of the Southern Medical Association at the recent Memphis meeting.

Lieut. Nicholas Ardan, M. O. R. C., Bristol, has been ordered on duty at the base hospital at Camp Jackson, Columbia, S. C.

Lieut. J. H. Herring, M. O. R. C., Memphis, is at Ft. Oglethorpe, Ga., for instruction in the medical officers' training camp.

Lieut. J. W. McClaran, Jackson, was given an assignment for duty in November at Ft. Sam Houston, Texas.

Dr. Stewart Lawill, Chattanooga, Lieutenant M. O. R. C., is at the Army Medical School in Washington for a course of instruction.

Dr. R. B. Griffin, Ridgely, having received honorable discharge from the Medical Reserve Corps, will resume practice at his home.

The November number of the Kentucky Medical Journal, was devoted to medical history in Kentucky and contained many most excellent sketches of the medical pioneers in that State, in which much truly great history has been made.

Lieut. F. J. O'Connor, M. R. C., Jackson, is on duty at Camp Kelly, San Antonio, Tex.

Lieut. J. W. Frost, M. R. C., of Dyer, is on duty at Camp Beauregard, Alexandria, La.

Lieut. D. T. Gould, Lawrenceburg, is at St. Louis for a course of intensive training in head surgery, after some weeks at Ft. Oglethorpe.

Lieut. C. C. Hardison, Lewisburg, was ordered in November to Mineola, L. I., for duty with the Aviation Section, Signal Corps.

Lieut. J. E. Lacey, Jasper, is now on duty at Camp Jackson, Columbia, S. C.

Lieut. Herbert Acuff, Knoxville; Lieut. G. E. Wilson, Cardiff; Lieut. Kyle Copenhaver, Mascot, and Lieut. W. H. Delap, La Follette, all officers in the Medical Reserve Corps, were ordered to report to Camp Sevier, Greenville, S. C., in November, having completed the training course at Camp Greenleaf.

Dr. L. Schumacker, Chattanooga, an officer in the Medical Reserve Corps, was engaged in November, under orders, in examination of the command at Camp Jackson for tuberculosis.

Lieut. W. K. Vance, Jr., Bristol, is at Camp Greenleaf, Ft. Oglethorpe, Ga., for training as an officer in the M. R. C.

Lieut. W. A. Cashion, Puryear, is at the training camp for medical officers at Camp Greenleaf.

Lieut. T. W. Menees, Nashville, is in training at Camp Greenleaf, Ft. Oglethorpe, Ga.

Lieut. W. P. Baugh, Elkton, reported for duty at Camp Greenleaf in November.

The annual Clinical Congress of the Chattanooga Academy of Medicine was held on November 9, with a large number of visiting doctors in attendance. Many clinics were held and a banquet was a most pleasant feature.

Lieut. W. E. Boyce, M. O. R. C., Flatwoods, has been ordered to the Canal Zone for duty.

Lieut. G. Frank Aycock, Nashville, is on duty at Camp Upton, Yapahank, L. I.

Lieut. Granville I. Walker, Gillases Mills, was ordered to report in November to Camp Joseph E. Johnston, Jacksonville, Fla.

Lieut. M. L. Connell, Nashville, is on special duty at Camp Pike, Little Rock, Ark.

Lieut. M. L. Shelby, Woodlawn, reported in November for duty at Camp Upton, Yapahank, L. I.

Capt. Jas. H. Smith, Trimble, has been assigned to duty at Camp Joseph E. Johnston, Jacksonville, Fla.

The doctor who is left at home can help greatly to protect the soldiers in the camps by insisting more strenuously than ever before that all communicable disease be isolated as completely as possible and that all possible preventive measures be applied and maintained.

Another draft is coming, and maybe a third. There must be medical officers for the men to be thus raised for our army. The quicker these needed officers are secured the better the care the newly drafted men will receive and the sooner the war will be ended.

The doctor thirty-one years old or under is the man who is now most needed in the Medical Reserve Corps.

Reserve—held for future needs. The need for more medical officers is sure to develop. There can be no army without reserves in all branches. The number of reserves must be adequate for all possible contingencies. Can you enlist?

Lieut. H. M. Francisco, M. R. C., Nashville, has been assigned to duty at Camp Lee, Petersburg, Va.

That little wiggle inside of you is going to keep on wiggling until you settle the question of enlistment by putting in your application for a commission in the Reserve Corps if you are fit, of proper age and not more needed at home than at the front.

Lieut. P. H. Faucett, M. R. C., Columbia, has been ordered to the Charity Hospital, New Orleans, for instruction and then to base hospital at Ft. Worth, Texas.

Lieut. B. C. Arnold, M. R. C., Jackson, is at the Post Graduate Hospital, New York, for a course of special instruction.

Dr. A. G. Donoho, Sr., died at his home at Hartsville on November 22, aged 80. Dr. Donoho had practiced his profession at Hartsville for more than fifty years and was widely known and loved throughout a large section of Middle Tennessee.

Dr. T. N. Coppedge, one of the medical officers of the Memphis Hospital Unit and a very popular member of the Memphis and Shelby County Medical Society, was married on November 24 to Miss Elizabeth Brook Davis, of **Kansas City**.

The Memphis and Shelby County Medical Society has sent approximately one-fourth of its members into the Medical Reserve Corps, and now the other three-fourths have notified the Surgeon-General that they are all at the service of the Government whenever needed.

At the Tullahoma meeting of the Middle Tennessee Medical Association, Dr. W. F. Cannon, Fayetteville, was elected president; Dr. J. F. Adams, Bradyville, vice-president; Dr. Jack Witherspoon, Nashville, secretary.

Your annual dues will soon be due. Do not neglect to pay them promptly, in order that medical organization in Tennessee may be maintained on the highest possible basis of efficiency. Now as never before this is necessary.

During Infancy and Childhood it is important but difficult to keep the bowels in order. It can be done by the continued use of

Liquid Petrolatum Squibb Heavy (Californian)

It is pure and safe, tasteless and odorless. Because it is neither a laxative, a cathartic, nor a purgative, but a perfect mechanical lubricant, is not absorbed by the system and does not disturb digestion, it may be given indefinitely in any necessary quantity. Thus it prevents intestinal toxæmia, restores normal action of the bowels, and aids in maintaining normal nutrition. Especially valuable for young patients during the summer and autumn months.

To be had at all drug stores in original one-pint packages under the Squibb label and guaranty.

LIQUID PETROLATUM SQUIBB, Heavy (Californian) is refined under our control and solely for us only by the Standard Oil Co. of California, which has no connection with any other Standard Oil Co.

E. R. SQUIBB & SONS, NEW YORK

Manufacturing Chemists to the Medical Profession since 1858

Capt. A. H. Myer, M. O. R. C., Memphis, was ordered to Washington in December for a course of special instruction in orthopedic surgery.

Lieut. E. S. Seale, M. O. R. C., Nashville, was ordered on special detail to duty at Camp Gordon, Atlanta, early in December.

Lieut. A. L. Lear, M. O. R. C., Sewanee, is on duty at Ft. Myer, Va., having been transferred under orders from Camp Meade.

Lieut. C. R. Senter, M. O. R. C., Memphis, was ordered to report at Camp Greene, Charlotte, N. C., about December 1.

Lieut. P. E. McNabb, M. O. R. C., Knoxville, who has been at the Army Medical School in Washington, has been assigned to duty with the Mobile Operating Unit at Walter Reed General Hospital, Takoma Park, D. C.

Lieut. C. D. Blassingame, M. O. R. C., Memphis, is on duty at the base hospital at Ft. McPherson, Atlanta, Ga.

Lieut. B. L. Schoolfield, M. O. R. C., has been ordered from Camp Greenleaf to Oklahoma City for a special course of instruction in

Capt. John B. Steele, formerly of hCattanooga, is now in command of Ambulance Company No. 346 at Camp Pike, Little Rock, Ark.

The Surgeon-General of the Army is begging for trained nurses for service in many hospitals. As we understand the matter, a great many splendid nurses who would gladly go are deprived of the opportunity because they were not graduated from hospitals having 100 or more beds. Some of the best nurses in the land came out of smaller hospitals.

BOOK REVIEWS

WHITE AND MARTIN'S GENITO-URINARY SURGERY AND VENEREAL DISEASES. By Edward Martin, M.D., Professor of Surgery, University of Pennsylvania; Benjamin A. Thomas, M.D., Professor of Genito-Urinary Surgery in the Polyclinic Hospital and College for Graduates in Medicine, Philadelphia; and Stirling W.

Moorhead, M.D., Asst. Surgeon to Howard Hospital, Philadelphia. 10th edition, thoroughly revised. 900 pages, with more than 400 illustrations. J. B. Lippincott Company, Philadelphia, 1917. Cloth, \$7.00.

The tenth edition of this standard work, dedicated to J. William White, is thoroughly modern and most complete. The preface to this new edition, by Edward Martin, presents a statement of faith in certain measures which some genito-urinary surgeons would have us discard, as well as a lack of faith in other measures which have not established their value in the hands of Dr. Martin and his co-workers. From the beginning of the opening chapter on "Examination of the Patient" on through to the last word of the last chapter on "The Treatment of Syphilis," this book is sound and sensible, sustaining to the fullest the reputation of its makers as able and discriminating surgeons and teachers.

THE SURGICAL CLINICS OF CHICAGO. October, 1917, Vol. 1, No. 5. Bi-monthly. W. B. Saunders Company, Philadelphia. \$10.00 a year.

Bevan, Ochsner, Ridlon, Halstead, M. L. Harris, Andrews, Phemyster, N. M. Percy, Beek, Kretschmer, Watkins, Eisendrath, McKenna, Mock, Straus and Speed are the contributors to this number, and the subjects covered run from hammer toe to hemangioma of the brain. A very interesting and instructive clinic, among others, is that of Kellogg Speed on "Hematuria in Appendicitis." Dr. Mock presents a case of corrosive sublimate poisoning diagnosed as and operated on for perforated gastric ulcer. Kretschner's clinic on hydronephrosis and ureteral calculus removed by intra-ureteral injections of oil is worthy of mention. Indeed, all the clinics in this number are worth studying for the helpful information they present.

DISEASES OF WOMEN. By Harry Sturgeon Crossen, M. D., Associate in Gynecology, Washington University, Medical School, St. Louis. Fourth edition, revised and enlarged. 800 illustrations. C. V. Mosby Company, St. Louis, 1917.

It has been only a few months since a review of the third edition of Dr. Crossen's book appeared in the columns of the Journal. Our reviewer was pleased to commend the book in very high terms, and we are now pleased to express even greater praise for the new fourth edition because of its completeness and its very genuine all-round merit. The revision has been thoroughly done and the enlargement over the former edition has been made by the inclusion of only such material as should go into a standard work.

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THE ENDOMETRIUM AND ENDOMETRITIS.

BY HOLLAND M. TIGERT, M. D., F. A. C. S.
Nashville.

In this paper the discussion will be confined to a consideration of those conditions which have hitherto usually been embraced under the general term of endometritis other than acute infections arising from the puerperium. The latter will receive only such mention as is necessarily incident to a discussion of the former.

In approaching the subject of endometritis, a brief discussion of the physiologic anatomy of the endometrium and the endometrial evolutionary changes incident to menstruation are not out of place. Grossly speaking, the endometrium consists of fibroconnective and muscular tissues, in which are imbedded glands covered by a single layer of columnar ciliated epithelium. The mucous glands are both large and numerous. There is no sharply defined submucosa, but immediately underlying the epithelium is a reticulated stroma, characterized by a relatively abundant accumulation of cells, so abundant as to be frequently mistaken for inflammatory infiltration. This membrane is abundantly supplied with lymphatics, nerves and blood vessels. The corporeal lymphatics communicate with the lumbar lymph nodes, while those of the cervix are drained by the iliac group. The blood vessels have their origin in the superficial capillaries of the uterus. From all of which it is easily seen that nature furnishes a wonderful line of defense from infection finding its way into this region.

The entire inner surface of the uterus and the inner surface of the fallopian tubes, as well as the utricular glands are covered with ciliated

columnar epithelium. At the external os the cilia gradually disappear and the mucous membrane becomes blended with the pavement epithelium found upon the vaginal face of the cervix.

The utricular glands are tubular and narrow, dipping deep into the muscularis and constitute a considerable portion of the volume of the endometrium. It is from these glands that the free secretion bathing the endometrium takes origin. The normal secretion of the endometrium throughout is alkaline in reaction.

Certain fundamental differences exist between that part of the mucous membrane which lies above the internal os, viz: the *corporeal endometrium*, and that part of the mucous membrane which lies below the internal os, viz: the *endocervix*. The endocervix is disposed in numerous folds which take their origin from two larger folds running longitudinally, one on the anterior and one on the posterior wall of the cervix. The entire system of folds constitute the *arbor vitae*. The endocervix is not so firmly attached to the muscularis as the uterine endometrium.

The glandular acini are lined with columnar epithelium, are of the racemose variety, and secrete a clear, viscid, tenacious mucus, which normally serves to act as a barrier to the uterus by more or less plugging the cervical canal. These glands were first described by Martin Naboth, hence are frequently referred to as the "Nabothian glands." Under certain conditions they are peculiarly susceptible to infections and not infrequently become a culture bed for germs, which may long remain therein, in attenuated form, and under favorable conditions develop new culture and new activity. The membrane possesses the characteristic stroma cells, is comparatively thin, and takes little or no

part in either menses or pregnancy. It also participates less than the endometrium in the atrophy of senility.

An examination of the cervix proper reveals that the greater part has no peritoneal covering; that its muscular layer is exceedingly firm and dense, due to a large proportion of connective tissue; and the blood vessels have thicker walls and smaller lumina than those of the uterine body. No large venous channels exist.

One of the chief functions of the cervix is to act as a sphincter, guarding the uterine cavity, while the most important function of the endometrium is to form the decidua and nourish the embryo.

From the foregoing as a practical consideration, it appears best to regard the body and the cervix of the uterus as two more or less distinct organs, differing in their histologic structure, physiologic functions, and in the pathologic processes affecting them.

Returning to the endometrium, it is somewhat surprising that a tissue so easily obtainable, and one which, from a histological point of view, is readily studied, should have, until comparatively recently, been so poorly understood in its periodic evolutionary changes. In 1908, Hirschman and Adler made an important contribution along this line. In truth, it may be said that they rediscovered facts that had already been announced some years before. Their work consisted of a painstaking study of the uterine mucosa in 58 women at various periods of the menstrual cycle, from which they discovered that from one flow to the next there was a constantly changing histologic picture. This evolutionary change they divide into four phases: the post-menstrual, interval, pre-menstrual, and menstrual. Practically these four phases might be properly considered to occur in three stages: first, menstrual congestion; second, a period of menstruation, and third, post-menstrual involution. The pre-menstrual congestion occurs during the ten days preceding the expected period, during which time there is a markedly increased thickening of the mucosa, due to hypertrophy and hyperplasia of the endometrial glands, and a transudation and an exudation into the stroma. The mucosa not infrequently becomes two or three times thicker than usual, the surface is irregular and furrowed as the result of the general swelling beneath. At

this stage, there is a marked similarity to the young decidua vera; and oftentimes this resemblance is materially increased, because the small, round, oval, or spindle shaped inter-glandular stroma cells may assume an appearance approaching that of decidual cells. Although some contend that there is an essential difference between the decidua-like cells of menstruation and true decidual cells, so far none have been able to define exactly wherein the difference lies. Curettings removed from the uterus at this stage have no doubt oftentimes led the pathologist, in the innocence of his ignorance, to return such reports as "endometritis glandular hypertolica" and "endometritis glandularis hyperplastica."

In passing, it might also be said that the old idea of decidual cells being pathognomonic of pregnancy is dealt a death blow.

During this stage the stroma cells will be found to be large, pale, swollen and separated by edematous exudate. At this time the mucosa may be fairly well divided into two more or less well defined layers; the deeper or inner layer being composed of dilated and hypertrophied glands, usually spoken of as the spongy layer; and a superficial or outer layer, which is denser and less glandular, called the compact layer. The blood vessels between these layers are dilated and congested. As a result of diapedesis and rhexis, the blood finds its way into the stroma of the mucosa, where it forms sub-epithelial hematomas. No doubt it is about this time that the blood makes its way through the surface of the mucosa and appears in the uterine canal, constituting the menstrual flow. As the blood wends its way into the lumen, through the interstices, epithelial cells either singly or in clumps are carried with it and discharged along with the menstrual blood. In this way, during the menstrual flow, the outer layer is desquamated. Regeneration of the mucosa then begins. The mucosa returns to its previous thickness; the blood vessels shrink, and any extravasated blood not discharged from the stroma is absorbed, while the broken epithelial surface is regenerated by the growth of new cells. The mucous glands, which, during the pre-menstrual stage were lengthened, spiral-shaped and distended with secretion, have now discharged their contents and will be found to have become narrow and assume a straight direction. At this time

the edema disappears. The post-menstrual regenerative stage extends over a period of about two weeks, when the evolutionary change begins anew. In those cases where conception takes place, and hence there is no menstruation, the pre-menstrual mucosa maintains its character, and merges into the decidua vera. During this cyclic change, there is an increasing glycogen production from the mucosa which reaches its maximum at the menstrual flow, and after which time gradually disappears until the pre-menstrual stage begins again. This is undoubtedly nature's provision for nourishment of the egg.

During the desquamating period the epithelial cells lose their cilia, which are promptly restored during post-menstrual regeneration. There has been some discussion as to whether the tubal mucous membrane participates in menstruation. It is to be said on this point that as a rule it does not, although there is some evidence, as a result of abdominal operations during menstruation, tending to show that there are some exceptions to the rule.

An examination of six of the leading textbooks, selected at random, shows a classification of 27 different varieties of endometritis, and not a single one of them was mentioned in every book. A description of so many different varieties of endometritides clearly shows a misapprehension of the underlying pathology. In 1906 the Section on Obstetrics and Diseases of Women of the American Medical Association appointed a committee for the purpose of simplifying the nomenclature, but, because of the great variety of opinion, no definite conclusions were reached. This, no doubt, was chiefly due to the fact that each wished to base the nomenclature on his personal observations, not taking into consideration the evolutionary changes in the endometrium that were subsequently revealed by Hirschman and Adler. Classifications of endometritis are only arbitrary at best. As a simple working basis, two great classes should be recognized: the *infectious* and *non infectious*. All other classifications when closely studied will be found to be various manifestations of one or the other of these classes.

The endometrium is a tissue which in the past has been greatly misunderstood, being very little responsible for the many ills heretofore attributed to it. Formally inflammations of this

tissue were regarded as being quite frequent, when in reality it is comparatively an inoffensive tissue and is rarely infected except during the puerperium. The gonococcus and the tubercle bacillus are practically the only microorganisms which will invade the non-parturient uterus, and tuberculosis of the endometrium is quite uncommon, while the gonococcus in its passage from the endocervix to the tubes resides only for a short period on the endometrial surface and rarely leaves any permanent trace of its sojourn. These facts have been amply borne out by careful examination of post-operative specimens.

The statement that endometritis is a rare condition is contrary to common belief, because a discharge so often seen coming from the cervix is supposed to have its origin in the uterus. On this point Howard Kelly remarks that true endometritis is a disease as rare as cervicitis and endo-cervicitis are common. T. S. Cullen found only forty-nine instances of endometritis, exclusive of tuberculosis, in an examination of 1,800 cases. This series included the examination of the endometrium in numerous cases of myomata and pus tubes.

The term endometritis should not be used indiscriminately to cover those changes in the endometrium which are due to bacterial invasion, and those changes which might be classified as perverted physiology of the menstrual mechanism. It might properly be used to indicate all types of infection, especially when associated with a proper descriptive adjective. Changes in the endometrium due to perverted physiology should have some appropriate nomenclature instituted. There is no doubt that an examination of the endometrium in all cases of abnormal uterine bleeding would reveal in a large proportion a histologically normal membrane, and that this group of cases formerly embraced under such terms as "functional" and "idiopathic endometritis" could be readily explained on a basis of disturbed physiology, giving rise to marked circulatory disturbance; and that not infrequently the function of the ovary or some link in the endocrin system would be found at fault. In speaking of these cases, one surgeon expresses it by saying that the trouble is often with the ovarian trigger rather than with the uterine gun. For obvious reasons, direct evidence of the physiological role of the

ovary in menstrual disorders will be a long time in forthcoming.

Assuming that the term endometritis describes only those conditions which imply a true inflammation, due to pathogenic organisms and the chronic changes that result therefrom, it remains for someone to devise a suitable nomenclature for those conditions which are the result of circulatory changes, both physiologic and pathologic, and which are now as a rule referred to as either hyperplasia of the endometrium or hypertrophy of the endometrium. Graves gives the following very practical classification:

(1) Infectious endometritis, the result of microbial invasion;

(2) Chronic interstitial endometritis, resulting from a previous infectious attack; and

(3) Gland hypertrophy, resulting from circulatory changes.

The latter type is the one which many writers refer to as hyperplasia of the endometrium. Although hypertrophy and hyperplasia are entirely different processes, one can readily appreciate how confusion arises when considering a membrane which normally undergoes such complex changes as those seen in the endometrium incident to menstruation. The two processes not only show widely varying degrees of intensity, but also great proportionate differences. At times it becomes quite impossible to say when the normal has merged into the abnormal, just as one is unable to fix the exact moment in the twilight when day ceases and night begins. For the present we must content ourselves until the pathologist further comes to the rescue.

That the endometrium with its alkaline secretion is, under ordinary conditions, afforded ample protection from bacterial invasion by the acid vaginal secretion is well known. The reaction of the vagina may be so altered in various ways that this natural protection disappears. That the evolutionary changes in the endometrium incident to the catamenial flow serve in many instances to intensify infections reaching the uterus from whatever source can hardly be doubted. Outside of the puerperal state acute endometritis is rare. The puerperium particularly and peculiarly exposes the endometrium to bacterial invasion, because of the denudation resulting from the placental sep-

aration, the patency of the cervix, and the general vascularity of the part. These infections may be limited to the mucous membrane, but in many instances they actually attack the parenchyma of the uterus as well. The micro-organisms most frequently encountered are the gonococcus, streptococcus, staphylococcus and, less commonly, the colon, diphtheria, and typhoid bacillus, and various saprophytic organisms, and occasionally the tubercle bacillus.

According to Crossen, of St. Louis, about 25 per cent of cases of uterine infection incident to parturition are due to gonorrhoeal extension or to the lighting up of latent gonorrhoeal infection. Outside of the puerperal state the endometrium seems to possess a remarkable immunity to gonorrhoeal invasion. In the process of ascending from the endocervix to the tubes, the gonococcus resides in activity on the endometrium for a time, but that this mucous membrane is not a congenial soil for a permanent abiding place is shown by the fact that microscopic examination of uteri removed for adnexal disease reveals no active inflammatory process in the endometrium; from which it readily appears that gonorrhoeal endometritis is not a disease for direct local treatment.

Chronic interstitial endometritis consists in a structural change in the endometrium, which is evidently the result of previous acute infection. Neither the pathology nor symptomatology of this condition is well understood. This condition is almost invariably associated with other inflammatory diseases of the pelvic genital organs, and women with this pathology show a marked tendency to abortion. Microscopically, the endometrium will be found markedly thickened, due to an increase in the stroma, in which small, round cell-like infiltration exists to a considerable degree. This type of endometritis is a fine example of pathology which is of great microscopic interest, but which is extremely difficult to recognize clinically.

Gland Hypertrophy: Certain pathological changes in the endometrium formerly ascribed to infection and erroneously termed endometritis are now beginning to be better understood. This has been brought about by a better knowledge of the endometrial evolutionary changes incident to the menstrual cycle, coupled with a keener appreciation of the role played

by the internal secretion of the ovary.

Leo Loeb has shown by animal experimentation that the secretory activity of the corpus luteum of the ovary is responsible for menstruation. He has also shown that injections of corpus luteum extract, associated with stimulation of the endometrium by slight injury, results in decidual formation. These experiments certainly would lead one to believe that alteration of the ovarian secretion might be responsible for pathological changes in the endometrium. While some secretion from the ovary presides quite directly over the function of the uterus, other hormones undoubtedly play a part. There is good reason to believe that the thyroid, the hypophysis and the adrenals exert a marked influence over the sexual apparatus.

McCord has shown that pineal gland administered to young animals stimulated the growth of the body and caused early sexual maturity. Thus there is constantly increasing evidence which strongly tends to show that we must seek an explanation for many cases of uterine bleeding and other menstrual disturbances in a perverted physiology of the menstrual mechanism.

Reference has already been made to the premenstrual and post-menstrual hypertrophy of the endometrium, which is common to all menstruating endometria, and which must be regarded as physiologic. It is only when this process becomes permanent or excessive that it is to be considered pathologic. Not a few such cases give rise to no symptoms. In some instances this process is so marked that the mucous membrane assumes an exceedingly rough appearance, the so-called polypoid endometritis. In other instances the endometrium shows great thickening and the glands become very long and spiral, branch out and exhibit a true hyperplasia. This phase, when well marked, has been called adenoma of the endometrium and is frequently diagnosed adenocarcinoma. One of the links in the chain which brings about these changes in the endometrium is circulatory disturbance. In general it might be said that any condition that brings about a prolonged hyperemia or a passive congestion of the genital organs tends to produce reaction. In fairness it must be stated that at times both the adenomatous types appear to exist as independent diseases with an absolutely obscure etiology.

Cullen, of Baltimore, has done more to elu-

cidate this complex endometrial condition than any other man in this country. He first described and called attention to it in 1900, and on three separate occasions since, in 1904, 1908, and 1913, he has drawn attention to it. Although the condition has thus been repeatedly described by Cullen and by some other men as well, it has never met with the recognition that its importance should demand. It was described by Cullen as follows:

"Clinically, we have a by no means small group of cases in which a patient, usually between 40 and 50, comes complaining of a very profuse menstruation and at times of an intermenstrual flow or a leukorrhoeal discharge, and in which carcinoma of the body of the uterus is suspected. On histological examination we find a most characteristic picture. The mucosa is much thickened. The glands are large and many of them are dilated. This dilatation is, however, not due to occlusion and cyst formation, as the gland epithelium is proliferated and higher than usual instead of flattened. Many of the enlarged glands are irregular in outline. The stroma of the mucosa is very rich in cell elements and nuclear figures can at times be detected. I am at a loss to give the condition a definite name. With such a mucosa one can say with absolute certainty that the patient has been subject to very free uterine bleeding. It is not malignant."

Dr. William H. Welch, in 1913, gave this histological picture the name of hyperplasia of the endometrium, since which time a German, Schroeder, apparently unaware of Cullen's work, described the condition and, curiously enough, gave it the name suggested by Welch. This type of endometrial disorder is chiefly seen in women between the ages of 35 and 45, although it may occur in girls in their teens. Its one symptom, as a rule, is hemorrhage. Although not proven, these changes in the uterine mucosa are to be regarded as secondary rather than primary. The local alteration in all probability merely represents some aberration of the fundamental cause of menstruation.

Driessen has described a form of endometritis which he designates "post-menstrual necrobiotic endometritis." The pathology shows necrosis, hyaline degeneration, infiltration with multinuclear leukocytis, dilatation of the vessels, cystic dilatation of the glands, prolifera-

tion of the epithelium, and deficient glycogen. There is incomplete regeneration of the uterine mucosa, such as is seen in the endometrium following abortion.

His explanation is that, because of some irregularity in ovulation and menstruation, the mucosa is not desquamated normally and that portions of the membrane remain and disintegrate, thereby preventing normal regeneration of the endometrium. There is consequent bleeding, such as is seen when remnants are left following abortion.

Another form of endometrial change deserving mention is senile endometris, which occurs in women past the menopause and is due to intense atrophic changes in the endometrium, plus infection. It frequently gives rise to a foul discharge and is often diagnosed cancer.

Symptoms and Diagnosis: A considerable per cent of all cases of endometritis, regardless of type, are symptomless; when symptoms exist the most natural and constant one is hemorrhage, which may take the form of metrorrhagia, menorrhagia, or of irregular bleeding coming under no particular classification.

Endometritis may cause a moderate leukorrhoea from the oversecretion of the utricular glands, but when endocervitis is coexistent, as is the case in many instances, the discharge is often quite profuse. Uterine pain and tenderness is, as a rule, not marked, although dysmenorrhoea is frequently present. The diagnosis may be quite difficult at best, but a carefully taken clinical history, coupled with a painstaking examination and microscopic study of the discharge or uterine scrapings, as indicated, associated with a better understanding of the complex pathology of this membrane, ought to lead to a more intelligent management of this malady than has been the case in the past. The attempt to cure supposed cases of endometritis by the indiscriminate use of the curet has done inestimable damage to these cases, having served to carry infection from the endo-cervix, commonly diseased, to the endometrium, rarely at fault, and having thus paved the way for extension of infection to the adnexa.

The curet should be limited to diagnostic purposes in the non-infectious types of endometrial pathology. Acute infectious endometritis should be let severely alone, since the endometrium in the vast majority of cases is

quite able to take care of itself and usually returns to normal.

Those cases secondary to other pelvic pathology will usually promptly recover when the primary condition is removed. Severe grades of chronic interstitial endometritis and persistent hyperplastic types may demand hysterectomy.

SOME FACTS ABOUT TUBERCULOSIS.*

By CHARLES A. ROBERTSON, M. D., Ridgeway.

Tuberculosis is a chronic, sub-chronic and rarely an acute infectious disease, produced by the tubercle bacillus gaining entrance to the system, by one or more of several routes, finally overcoming the resisting forces of the body cells and body fluids, lodging in the tissues. It matters not through what portal these organisms enter the system, they travel very much the same route through the lymphatic vasoglandular structures and a primary glandular focus is established, from which secondary localizations are produced by metastases through the blood and lymph stream, although it is proven that such bacilli may pass the lymph glands and reach the blood stream without producing histologic changes in the glands through which they pass; in this latter event giving rise to a bacillemia, often producing a wide distribution of metastases, such as miliary tuberculosis or phthisis florida of the older writers. For the most part the hematogenous metastases are relatively mild and more prone to localize in other tissues than the lungs. Lodgment of tubercle bacilli in sufficient numbers in the tissues produces irritation and inflammatory hyperemia, calling forth a deposit of leukocytes, lymphocytes and fixed cells, through which cell proliferation the bacillary area is walled off and the tubercle is formed. Adjacent to tubercles, the non-tuberculous tissues are more or less involved in a collateral inflammation. This inflammation may be exudative in character, either of the serous, fibrinous, cellular, sanguineous, or purulent variety (Pottenger), or involve the production of new tissues. Thus the same changes may occur here as in the tubercle itself—softening or new tissue formation.

*Read at Annual Meeting of Tennessee State Medical Association, Nashville, April, 1917.

While there are a number of types of tubercle bacilli, there are only two of interest to us in the study of epidemiology and etiology of tuberculosis in man—the human and bovine types. In the early nineties much discussion arose over the question of the identity of the bovine and human types of tubercle bacilli, brought forth by Theobald Smith in this country and Koch in Germany, the details of which we will not discuss here further than to show the relatively minor role of the bovine type in the etiology of tuberculosis in man. It is now very generally agreed that the bovine type of tubercle bacilli is responsible for only one-twelfth of all forms of human tuberculosis, and that the remaining eleven-twelfths is due to infection from the human strain; that of the bovine infections, the greatest number occur in childhood, and that after the sixteenth year the bovine type almost entirely disappears from clinical tuberculosis. Park and Krumweide, in an analysis of 1,038 cases of tuberculosis, found the bovine type of bacilli as follows:

0 to 5 years.....	26.5 per cent
6 to 11 years.....	25 per cent
16 years and over.....	1.31 per cent

Thus it will be seen that the human type is not only responsible for the greater number of cases in childhood, but almost entirely all tuberculous disease of adult life. Eastwood and Griffith, in Great Britain, in an analysis of 261 cases of bone and joint tuberculosis in the several age periods, found the following percentages of the bovine type:

All ages	21.1 per cent
Under 10 years	29 per cent
Over 10 years up to 25..	9.4 per cent
Over 25 years	None

The same observers analyzed seventeen cases of genito-urinary tuberculosis and found the bovine type in three, or 17.6 per cent of the cases. The three bovine cases were infections of the kidneys in persons 19, 20 and 25 years of age, respectively. Griffith, in the *London Lancet* of April, 1916, reports the results of his studies of sputum from 212 patients suffering from pulmonary tuberculosis (consumption) in England and Scotland, in which he found only three cases, or 1.4 per cent, of the bovine type.

Tuberculosis is the result of childhood infection, as is shown by a large number of observers, among them Fischberg and Pottenger, in

this country, and Hamberger and Harbitz, in Europe. Of 509 children ranging from 2 to 14 years, Hamberger, in Vienna, reports that the percentage of positive tests gradually increases with the age until the fourteenth year shows 94 per cent of positive reactions. When we consider the ubiquity of tubercle bacilli and the ever-present sources of infection brought about directly or indirectly by the great army of open cases, living for the most part in environments more or less bad, insanitary housing conditions, wholly ignorant of their own wretched condition and of personal hygiene and oblivious of their danger as bacilli carriers, it is indeed almost a miracle that 6 per cent of the children escape infection.

From a careful review of the literature and clinical analysis we are justified in the opinion that pulmonary tuberculosis is the type of the disease in the adult, and that of joints, bones and viscera belongs distinctly to the period of childhood; that all infections occur before the sixteenth year of age and probably the majority prior to the tenth year of life; that the maximum bovine infection is less than 25 per cent of all childhood infections (261 cases, 55 infections, 21.1 per cent—Eastwood and Griffith); and that pulmonary tuberculosis is but an exhibition of relative immunity until adolescence, when many other factors become operative to break down the barriers of the protective forces of the body cells and body fluids, forming localizations or metastases in one or more of the body tissues offering a suitable soil for implantation and development of the bacillary tubercle. Why so small a per cent of bovine tubercle bacilli are found in adult tuberculosis (consumption), which, according to the Imperial German Board of Health, in 1,400 cases investigated is 66 per cent (Pottenger), is difficult to explain.

It may be that transmutation of the bovine type in the human host will eventually be demonstrated, though as yet nothing definite is known. Again, it is interesting to note that apparently certain strains of tubercle bacilli are prone to attack certain kinds of tissue, perhaps more or less dependent upon varying degrees of virulence. Whether there is any similarity here to the peculiar cultural characteristics of the streptococcus as demonstrated by Rosenow, in which a special predilection is shown for the

kind of tissue from which they are grown, remains yet to be established, and deserves further study.

Referring now to pulmonary metastases or localizations of the disease in the lungs, it must be borne in mind that both the tubercle deposits and collateral inflammation may undergo a retrograde or progressive change, and that one of two results will sooner or later supervene, namely: Fibrosis, resorption, walling off of calcified products, with healing and inactivity, possibly cure. The other, caseation and breaking down of the tubercle, with softening of the tissues involved in the collateral inflammation, producing a definite cavity filled with material of a degenerate, sero-sanguineous or purulent nature, sooner or later becoming involved with mixed infection and multiplicity of pathogenic and pyogenic organisms. It is not until the beginning of these ulcerative changes that it is possible to find tubercle bacilli in the material thrown out from the broncho-pulmonary tract, and if the foregoing observations are correct, the utter folly of relying upon tubercle bacilli in the sputum for early diagnosis is well established.

When Robert Koch announced the discovery of the tubercle bacillus as the cause of tuberculosis he accomplished one of the greatest achievements of modern times and deserves the plaudits of the entire civilized world. Yet with all of its value, and not underestimating the great forward step in scientific advancement, may I not ask if we are not utilizing this great discovery and the laboratory technique he gave us in a way that is productive of much harm, and is too often the cause of the wanton sacrifice of human life? From the days of the fathers of medicine, before the Christian era, up to something over a couple of decades ago, tuberculosis was looked upon by both profession and laity as an absolutely incurable affection; but through the self-sacrificing and life-long endeavors of such men as Koch, Brehmer, Wolff-Eisner, and our own Trudeau, Von Ruck and Pottenger, the curability of the disease has been established, and that, too, in a surprisingly large percentage of cases.

It is well recognized by all the workers in the field of phthisiotherapy that there are two factors in prognosis which stand out more prominently than all others combined. One is the

question of early diagnosis, which is by far too little understood and too little appreciated by the members of our profession, and particularly so by the family physician. The other is the amount of resistance, strength, or so-called vitality, possessed by the patient at the time he comes under treatment. Of course there are other factors which have an important bearing upon the question of arrestment of the disease, or which may become determining factors in the progressiveness and ultimate fatal issue, but all such are subordinate to the importance of early diagnosis and conservation of vital resistance.

What constitutes an early diagnosis? A clear, comprehensive and intelligent answer to this question is by no means easy, but a knowledge of how to arrive at an early diagnosis can be acquired by the average practicing physician if he will but take the time to study this question diligently and earnestly, as the importance of the question deserves and his sacred responsibilities demand. I am sure that no one within the hearing of my voice will contradict the statement that 98 per cent of the diagnoses of consumption today is made wholly dependent upon the positive sputum; and if, perchance, the specimen should consist of saliva or nasal mucus which has been sent to the laboratory by an ill-advised patient, then only too often patients are advised that their lungs are perfectly sound and 'as clear as a bell,' when, in fact, that patient has long since passed to an advanced state of septicemia or septicopyemia and profound saprophytic intoxication.

Only too often have I had the lamentable experience of having cases sent to me by physicians, otherwise well informed and of high standing in the profession, with a short note explaining that "I am sending you an early case. This man has only been complaining for two or three months, and it was only yesterday, or last week, that we were able to find tubercle bacilli in his sputum." And decidedly one of the most embarrassing features in connection with this type of case is that the physician not infrequently tells the patient, "You haven't got much the matter with you. You've only a slight spot on your lung about the size of a silver dime, and by instituting treatment thus early you will be well in a month." This patient comes into the institution expecting the impos-

sible to be accomplished, and upon physical examination and careful analysis of his "Status Presens" we are forced to make a record in his case history, "Classification: Far advanced. Prognosis: 'Pessima est.'"

From the very nature of things, and in consideration of the fact that tuberculosis is a disease of the lymphatic system and circulating body fluids, received in childhood, lying dormant and held in abeyance for years through the acquired protective forces of early infection, metastases occurring at a later period in life dependent upon a multiplicity of inviting conditions should make it very apparent that a diagnosis made at a time when the metastatic processes have undergone ulceration and destructive changes in the tissues cannot be anything but a late diagnosis. The object of writing this paper is one and only one, and that is to call attention in the most forcible manner possible to the great fallacy and stupendous error of delaying a diagnosis until such can be based upon bacillary findings thrown off in sputa or other debris from tissues involved in these destructive ulcerations and necroses.

Something over a year ago, in discussing a paper which I read before the Middle Tennessee Medical Association, a grand old man of the medical profession, who has seen more than a half century of service in faithful and conscientious effort on behalf of suffering humanity, made the rather laconic remark that I was insisting upon making a diagnosis of consumption before the patient had the disease. I fear that this idea is very prevalent, and that there are many who would be prone to offer such a criticism. Nevertheless, I feel that it is important and that I am fully justified in condemning in the strongest possible terms the practice now generally observed of basing a diagnosis of pulmonary tuberculosis in its early stages upon the presence of tubercle bacilli in the sputum.

By what means at our command can we arrive at a satisfactory conclusion and give timely advice in the vast majority of cases? As previously stated, the answer is not an easy one, and even though I were competent to do so, the time allotted to the reading of this paper would not permit of a detailed review of the entire subject. However, I will endeavor to offer a few suggestions which, if followed up, ampli-

fied and elaborated upon by diligent study and investigation, will accomplish much good.

First of all, I desire to emphasize the great necessity and importance of a careful, painstaking and methodical examination of your patient, and here I am convinced that I meet squarely and openly one of the greatest obstacles in the way of early diagnosis. Doctors as a rule do not examine their patients, do not make careful, painstaking examinations, and I am firmly convinced that this is responsible for nearly all of the mistakes in diagnosis—simple, simon-pure laziness, and not incompetence.

Secondly, a careful study of the patient's family and personal history, particularly with reference to childhood environments and the housing conditions during the first fifteen years of life, which would favor childhood infection. A careful analysis of the diseases suffered during childhood, particularly with reference to glandular involvement and unexplained and indefinite febrile attacks of a more or less evanescent nature. One by one, from infancy to the present time, ferret out every clue, and link by link unite all facts bearing upon the health of the individual into one chain of evidence, which may of itself become crystallized in the form of a logical conclusion that the patient is or is not the subject of tuberculous disease.

I would emphasize the great importance, for the time being at least, of losing sight of the fact that the patient possesses a pair of lungs or any viscus which may be the subject of tuberculous disease, and that the first efforts be directed to a diagnosis of the man—the individual with whom we have to deal—and subsequently, if he is adjudged tuberculous, determine the localizations. A suspicious family and personal history, properly correlated with recent ill-being, slight losses of weight and strength, apparently insignificant gastric disturbance, a rapid pulse, slight afternoon elevations of temperature, malaise, more or less general aching hitherto not experienced by the patient, inability to bear exercise without fatigue, are all symptoms worthy of the most profound respect. With eyes watchful to observe, ears keen to hear and fingers with the sense of touch highly developed in palpation, in surroundings free from noise and other disturbing influences, we approach the patient in an endeavor to make a careful physical exploration,

prepared to recognize the slightest deviation from the normal, rather than with an anticipation of encountering the most marked symptoms of the grossest lesions. Inspection, palpation, percussion, auscultation, each in turn has its value and contributes its share to the final estimate which is to be made. Blood pressure in determining hyper- and hypotension is a matter of greatest significance, as is the valuation of the temperature, pulse and respiration.

Many investigators within the past few years have been busy in hopeful experimentation to find a method of fixation of complement, paralleling the value of the Wassermann test for syphilis, but as yet no general agreement has been reached. In this connection it is interesting to note the work of Major Charles F. Craig, M. D., U. S. Army Medical Corps, El Paso, Texas, who, in an interesting report in the *Journal A. M. A.*, March 10, 1917, claims positive reactions in 96.6 per cent in all stages of activity, and 65 per cent of the inactive cases, many of which were cured and without clinical symptoms, though proven serologically active; and concludes as follows:

"The results prove that complement binding bodies are present in the blood serum of tuberculous patients when symptoms of infection are slight or absent, and it is my belief, and that of most recent investigators, that a positive reaction with this test means the presence of an active focus of infection somewhere in the body, and that the test will prove of great value in differentiating really cured infections from those which are merely quiescent."

Finally, if after the most painstaking and careful investigation we are still in doubt, I cannot too strongly urge the resort to a tuberculin test. In childhood the method of Von Pirquet appears to be quite satisfactory and reliable. In the adult only the systemic test should be relied upon, and that, too, properly administered in at least three doses, preferably four, unless a positive reaction results from one of the earlier doses. It must be remembered that the interpretation of a tuberculin reaction requires a rather broad and liberal conception, and that there are some possible fallacies which would lead one astray.

DISCUSSION.

DR. G. F. AYCOCK, Nashville: Dr. Robertson in his paper has called our attention to and proved by results of different workers the fallacy which is probably accepted by many, of most childhood tubercular infections being of the bovine type. According to the highest statistics which he reported, it was 29 per cent, and the general average was probably 25 per cent at the highest rate. That is contrary probably to the general opinion, still it may be that a transmutation occurs in the case of streptococci in adult life, where the human type of tubercle bacillus is developed. Of course, there has not been enough work done on that to arrive at any definite conclusions.

Another point he brought out that I can accept from my review of the literature and from my limited experience is that most of the infections are of childhood origin. He did not mean that the infection begins with the pulmonary type, but the initial infection of tuberculosis takes place prior to 16 years of age. There will be arguments raised against that, but still it is a popular acceptance that exposure is a large factor, and segregation is still practiced in some tubercular hospitals and in practically all general hospitals.

With reference to the infection, I think we are prone to lay too much stress on the bacilli. Bacilli are necessary for an infection, but there are other infections that we must take into account, and that is lowered resistance from any cause, whether from disease or unusual exertion, or contracting colds, or anything like that. But I think that in view of the fact that we are all exposed to the presence of tubercle bacilli, we should give less weight to that particular theory and begin to look about for the individual characteristics, resistance especially. As one proof of that, if you will consult the statistics of the various sanatoria for the care of the tuberculosis, you will find that the infection rate in attendants at these places is less, or the proportion is less, than in attendants at general hospitals.

Notwithstanding all attempts, some of them foolish no doubt, to kill the bacilli with the various germicides and disinfectants, it is absurd to assume that we even kill half of them. No doubt bacilli are free around a sanitarium, no matter how carefully antiseptics are used and germicidal measures have been taken.

With reference to the diagnosis of the disease, Dr. Robertson has properly, I think, called our attention to the fact that we should not wait for the finding of tubercle bacilli in the sputum. Of course, you will find the bacilli in what you would consider early cases clinically, and the mere finding of

them does not necessarily mean that your prognosis is bad, although it does mean an advanced case pathologically, it may not be clinically, especially as far as prognosis goes. I think the reason that a great many physicians hesitate to make a diagnosis, or fail to do so of tuberculosis early, is due to two things. One is they lay too much stress on the lung itself, and another is, they hesitate to stigmatize the patient, if you will excuse that expression, unless they are absolutely certain.

Radiography has demonstrated the importance of latent infections in the mediastinum that have previously gone unrecognized, in all probability. In these cases the family history, previous and present history, would be of great value in arriving at a diagnosis. I agree with Dr. Robertson that the history is of great importance, and especially a history of tuberculosis in a family, because in cases of childhood infection it is only natural to suppose that the patient was exposed to the disease in childhood when the conditions were right for the initial infection.

Another thing in the history is repeated and protracted colds, so slight in extent as not to cause very much fever.

We recognize now in this era of focal infection that the streptococcus and other organisms may cause slight febrile attacks that cannot be accounted for otherwise, but I think tuberculosis should be remembered when we cannot account for it in any other way.

DR. ROBERTSON (closing): I do not know that I have anything additional to add, except to say that it might be inferred if one delayed making a diagnosis until tubercle bacilli were found in the sputum, it would always mean that the patient had passed to a stage where recovery could not take place. This is certainly not true, and I would not want to leave such an impression. There are perhaps many cases of late tuberculosis that have a better diagnosis than some of the more incipient cases. All late cases were once early, and there are a number of low resisting cases that go on rapidly through each period to a fatal issue, regardless of what may be done for them. Therefore, the idea must not be gained that the simple finding of tubercle bacilli in the sputum means a diagnosis too late for recovery in many instances.

This paper was written as a plea for an effort to be made for an earlier diagnosis and a more systematic investigation of cases.

THE BUCCAL ROUTE FOR OPERATIVE PROCEDURES ON THE ANTERIOR PART OF THE FLOOR OF THE NOSE.*

By W. LIKELY SIMPSON, M. D.,
Memphis.

A few years ago, while doing a double antrum operation with the mucous membrane incision on the alveolus extending entirely across from one side to the other, giving such good exposure of the apertura pyraformis and the floor of the nose, it occurred to me that a good many operative procedures around the anterior part of the floor of the nose might be much easier carried out through the buccal route rather than through the anterior nares. A number of pathological conditions which are apparently quite well reached through the anterior nares are in reality much easier and better removed through the buccal route.

In some of the most marked deformities of the septum Kretschmann's buccal route method may be used with advantage. The field of operation is so much larger by the buccal route than is possible to get through the anterior nares. If one wishes to preserve the mucous membrane in a normal condition in operating about the floor of the nose, this is almost impossible if one operates through the anterior nares, but is quite possible by the buccal route, if the pathological condition does not involve the mucous membrane.

Without further elaboration I shall report two cases, which will help to emphasize the advantages of the buccal route.

CASE 1.

Annie J. (c.) Age 22 years.

PREVIOUS HISTORY: For several years has noticed a swelling in the nose, especially in the region of the alae nasi. Obstruction of breathing.

PRESENT CONDITION: Quite a well-marked bulging of the floor of the nose, on examination through the anterior nares. There is a swelling on both sides of the nose. The growth has a smooth surface and the mucous membrane

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seems to be in normal condition. The anterior nares quite appreciably obstructed. On examination through the mouth, a soft enlargement about the size of a hickory nut can be felt, anterior to the apertura pyraformis. A diagnosis of bilateral cysts was made and on account of wanting a large field of operation and wanting to preserve the mucous membrane in a normal condition in the nose, the operation was carried out by the buccal route. An horizontal incision was made. The mucous membrane and soft tissues were lifted up from the bone and retracted upward till the bilateral cysts were exposed. The cysts were now carefully dissected and removed in their capsules without rupture. They were about the size of large hickory nuts. See Fig. 1.

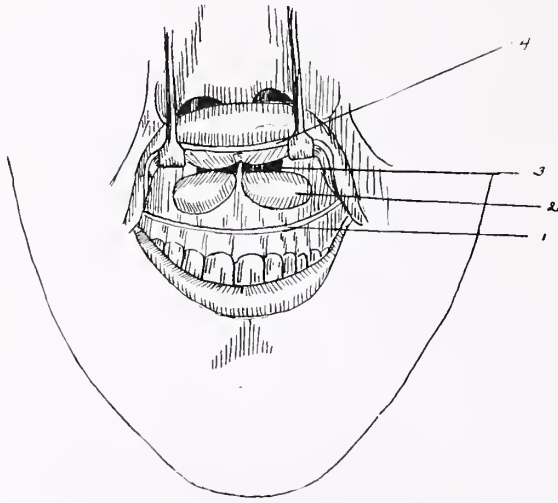


Fig. 1.

1. Line of incision.
2. Cystic tumor.
3. Apertura pyraformis.
4. Upper lip and soft parts retracted upward.

These cysts extended slightly into the apertura pyramis and anteriorly around the opening. It was quite a simple procedure to remove these cysts by this method, but, if it had been tried through the anterior nares, it no doubt would have been quite difficult to have gotten a clean removal, and no doubt the mucous membrane would have been rather badly lacerated.

After the cysts were removed, a few silk sutures were inserted.

Uneventful recovery.

Case 2.

C. B. S. (c.) Age 14. Female.

PREVIOUS HISTORY: Has always breathed through her mouth. She snores very badly.

She is very backward in school, though she has gone to school several years.

PRESENT CONDITION: Patient is very dull. Can not read. Patient has medium sized adenoids and tonsils. There is an almost complete occlusion of both anterior nares. The occlusion is most marked at the anterior end of the lower turbinate, and seems to be mostly bony, but it is partially soft tissue, especially is this so superiorly. The outline of the turbinates can be partially made out through a small opening on either side.

With reports of failures in similar conditions about the nose fresh in my mind, and being afraid of adhesions being formed, if this bony growth was operated through the anterior nares, an incision was made horizontally in the mouth, as if one were going to do a double Denker operation. The mucous membrane, periosteum, etc., were elevated and drawn upward to the apertura pyraformis, and the mucous membrane was lifted off the floor of the nose, exposing the bony, (see fig. 2.), occlusion.

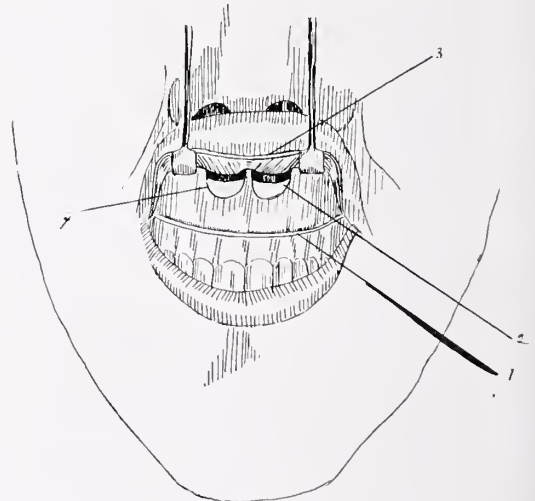


Fig. 2.

1. Line of incision.
2. Body obstruction in floor of nose.
3. Upper lip and soft parts retracted upward.
4. Apertura pyraformis.

The bony growth extended well up on the outer wall of the nose. The mucous membrane was lifted off the bony obstruction without tearing it.

The bony obstruction was now chiseled away, and, then, the mouth wound was closed with silk and the nose packed slightly with gauze. The gauze was left in the nose four days. There was some occlusion by soft tissue in the roof of

the nose, which was incised and separated and packed.

This patient made a very good recovery. She breathes practically normally now.

These two cases, I hope, have helped to emphasize what can be done by the buccal route in such cases. I believe the results were much better, however, than if the operations had been done through the anterior nares.

Muen. Med. Wochenschr. No. 40—1908.

INGUINAL HERNIA.*

By H. L. FANCHER, M. D., Chattanooga.

Hernia: A protrusion, a sprout—not necessarily a rupture.

The best definition of a hernia is one of the oldest—"the sojourn of a viscus from its natural habitat." Another good definition of hernia is "the protrusion of the whole or a part of a viscus from the cavity in which it belongs."

Hernia and *rupture* should not be synonymous terms, for nothing but great violence directly applied would be sufficient to rupture the coverings of the body cavities, and that would produce sudden and great pain, hemorrhage and loss of function.

Inguinal hernia, so often called *rupture* by the laity and by physicians, depends on two existing conditions: (1) a predisposition by way of weakness in the abdominal wall, and (2) increased intra-abdominal pressure. Sudden violence or accident plays no part in the production of inguinal hernia. If the inguinal canal through the abdominal wall is normal, no hernia will develop, no matter how great the intra-abdominal pressure.

The etiology of inguinal hernia has no bearing on the treatment, whether it be conservative or radical; but it is of vital interest at the present time to doctors, legislators, courts and the laity, due to the fact that accident insurance is very popular, and because our state governments are rapidly passing laws holding corporations and employers legally and financially

responsible for traumatism and vocational accidents to their employes. Thirty-three states have already passed such laws, known as "Employers' Liability Acts," "Working Men's Compensation Laws," etc. Tennessee will probably pass a similar act when its legislative body meets again.

Most text-books, under the heading of etiology, make two classes of hernia, namely, *congenital* and *acquired*, while the more recent writers on the subject recognize a congenital element in all inguinal hernias. Even in the so-called acquired type there exists a funicular process, a diverticular process of peritoneum, which follows the testicle in its descent, or a peritoneal dimple at the abdominal end of the inguinal canal, which logically indicates a congenital defect.

I will quote here at length from Dr. R. W. Locher, of Baltimore, in a recent paper on "Inguinal Hernia," written from a medicolegal aspect: "Whether or not the sac is developed from a congenital defect, such as a small funicular process, or whether it is of the true acquired variety, there is one conspicuous fact, common to both, namely, that the sac is the terminal result of a gradual process of stretching, covering a considerable period of time, and not the result of a single sudden strain or effort.

"The peritoneum possesses considerable elasticity, and can be stretched gradually to almost any limit, but any single effort strong enough to produce protrusions of viscera, such as are encountered in hernia, instead of stretching the peritoneum, must necessarily rupture it. That rupture of the peritoneal coat does not occur, we are well aware, so as a natural consequence its presence as a hernial sac is due to gradual stretching."

Medical men have so long called hernia "*rupture*" that the laity have come to regard the condition as accidental. The word "*rupture*" carries to the lay mind an impression of violent force, with tissues torn asunder, when, in fact, nothing is torn or ruptured in inguinal hernia.

Since Bassini demonstrated that the peritoneal sac was the primary cause of hernia, and that to eliminate it would cure most hernias, the medical profession has slowly come to realize

*Read at annual meeting of Tennessee State Medical Association, Nashville, April, 1917.

the congenital origin of the condition. Most authors of modern text-books on surgery state that inguinal hernias have a congenital defect for their beginning in most cases. All of the authorities in recent current medical literature that I have been able to find touching on the subject are a unit in the assertion that a congenital defect is present as a causative factor in the production of inguinal hernia, and that it is gradual in its descent.

In June, 1915, an editorial appeared in the *American Journal of Surgery* in which the writer took the positive position that "the ordinary types of abdominal hernia are not traumatic in origin," that "the 'strain' or 'fall' to which they are often attributed cannot properly be considered their cause." J. M. Salmon, in an address before an association of railway surgeons last year, taking the same position that hernia is never traumatic or accidental, said, among other things, that "clinical experience and scientific investigations have demonstrated the fact that in the absence of congenital defect, either in the form of a pre-formed sac, an open funicular process, or an abnormal opening in the abdominal wall, inguinal hernia does not occur."

A "strain," "fall" or "jar" may have been the last in a series of forces which resulted in the development of a hernia in the presence of pre-existing abnormal anatomical conditions, but must not be regarded as the *primary cause* just to make it come within the meaning of the terms of an accident policy.

A few clinical facts which we have learned must for all time eliminate the idea of rupture and the sudden accidental cause of inguinal hernia: First, that we often find an inguinal hernia in a patient ignorant of the fact and who has never had a pain in that region. Second, that every hernia that we operate on has an unbroken peritoneal sac, which is adherent to the surrounding tissues, with absence of torn or ruptured tissues in the region of the inguinal canal—no matter how recent the protrusion occurred. Third, that by simply removing the peritoneal sac, anchoring the stump above the inguinal opening to prevent the intra-abdominal dimple and closing the overlying tissues as we found them, we will cure a majority of them.

Inguinal hernia is one of the most prevalent surgical conditions that we come in contact with, especially in the male, as hernia is about twelve times more prevalent in the male than in the female. I say "surgical conditions" because inguinal hernia is a surgical condition, except in infants and the very feeble. Nothing else cures, for the anatomical defect still exists, although a truss may cause adhesions that, for a time, will prevent the viscus from protruding, but the sac still remains and is a constant source of danger and anxiety. It is not uncommon for these so-called truss-cured cases to reappear and become strangulated.

Why advise operation in all except infants and the very feeble? For three reasons, namely: (1) The truss treatment is only palliative, inconvenient and carries with it a definite risk in its false security; (2) operation nearly always permanently cures, and (3) it carries a very low mortality rate.

Coley reports in over 3,000 operations at the Hospital for Ruptured and Crippled less than 1 per cent recurrences and .17 per cent mortality.

Davis reports a series of 1,500 operations in the Massachusetts General Hospital, done by seventy-five different operators—of varying abilities—with a mortality of .53 per cent and 3.7 per cent recurrences.

Wolfler reports over 1,400 cases operated on in his clinic at Prague, with a mortality of .63 per cent and from 5 to 8 per cent recurrences.

Brinsmade says that more than 95 per cent of the cases of inguinal hernia operated on in the Long Island College Hospital Clinic are cured.

Statistics show that all methods of operating give uniformly good results, more depending on the operator than on any one of the several classical operations. More depends on the finer points of technique than on any one method of operating, whether it be the original Bassini or any one of its modifications.

Clean dissection, complete hemostasis, high ligation of sac, gentle handling and preservation of important vessels and nerves, and the correction of anatomic defects in abdominal walls are the principal essentials to success, remembering that the peritoneal diverticulum is the principal cause of visceral protrusion and

that the transversalis fascia is the principal anatomic structure, which holds and supports the abdominal organs within their cavity.

CONCLUSIONS.

1. Inguinal hernia is not a rupture, and should not be classed as an accident, which implies sudden and violent means, but is of gradual formation, due to a pre-existing anatomic defect.

2. It is of vital importance that physicians acquaint themselves with the modern conception of the etiology of the condition and instruct the laity and others interested, not only for the sake of science, but on account of justice to all concerned.

3. Operation is the treatment of choice, because truss treatment is only palliative, inconvenient and carries a definite mortality risk. Operation is almost uniformly successful—less than 5 per cent recurrences and less than 1 per cent mortality.

Success of the operation depends more on the individual operator and the finer points of technique than on the choice of any one of the so-called classical operations.

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DISCUSSION.

DR. JOHN A. GAINES, Nashville: This subject has been very thoroughly presented, and I agree with what the essayist has said in regard to the etiology of hernia. I do not believe we ever have in ordinary practice hernias occurring by violence to the extent formerly supposed.

I feel that I have nothing to add to the suggestions the Doctor has made, except I want to speak of one point in technic that is being used to some extent in the aiding of the final results. We usually have failures due to imperfect technic by any method in which the sac is tied off and closed

up, and the wound is closed, whether the cord is or is not displaced. If the wound is properly closed, and if we can avoid infection, we practically always have a cure. Failure rarely ever occurs except as a result of infection. Instead of making the ordinary longitudinal incision in line with the sac, we make a transverse incision through skin and fat. This has every advantage. In the first instance, you avoid the plexus of vessels; you can have just as good an exposure as by a longitudinal incision, and especially do you avoid the difficulties of dressing the wound and you avoid the danger of infection by carrying the wound down to the scrotal line, all of which are decided advantages, and from personal experience I know we get to the field of operation just as easily, and this technic is very much more easily carried out.

DR. S. T. HARDISON, Lewisburg: There is one point that has been brought out in connection with this paper and discussion that is very practical. In this day and time, when every employe, every hand, everybody is looking out for something whereby they can secure damages, we should remember the element of congenital defect in connection with hernias. What the essayist has said in regard to that is evidently true. I wish we could have our legal brethren believe that this congenital defect exists, then, when the railroads or factories or sawmill, and even farmers, are charged with an accidental injury of a hand or an injury liable to result in a hernia, there would be a better understanding and freedom from responsibility of criticizing them. If there is a congenital defect existing there, and an injury happens to an employe, the employer is not liable.

I want to emphasize the importance of disseminating that thought and in doing so we will eliminate things that cause us a great deal of trouble.

DR. C. N. COWDEN, Nashville: The question of hernia is a good deal like the prevention of cancer; it is a question of education. A man goes through life wearing a truss; if the practitioner will tell him how small a thing a hernia is and how little inconvenience it would be for him to be operated on, and how little danger there is attached to the operation, he would be a grateful patient. It is a small operation, and in 99½ per cent of the cases the patients get well without a recurrence. It can be done under local anesthesia, and the patients can get rid of the hernia and not have to wear a truss throughout life. If you educate the people along this line, and the general practitioner is the one to educate them, it will be a great advantage to the men who are afflicted in this way.

DR. FANCHER (closing): I wish to thank the gentlemen for their discussion on the subject. Dr. Gaines spoke of the transverse incision. I do not know exactly what he means. It does not seem to me feasible to make a transverse incision of the fascia; it would be all right in the skin and fat

which do not enter into the support of the viscera, but with a longitudinal incision, that is, an incision in line with the sac, we do not cut the fibers of the fascia.

In regard to doing this operation under local anesthesia, I am not an enthusiast on local anesthetics for any operations. I very often begin with local anesthesia, but usually wind up with a general anesthetic. I find I cannot do as thorough work in over half of my cases under local anesthesia as I can under general anesthesia. If the sac is large, if the neck is large, if there is much dissection to be done, you produce a good deal of trauma and you have to use a great deal of your solution. Using a needle frequently adds more danger of infection. The majority of infections in our cases come from the ones operated on under local anesthesia. If I am in doubt as to the mechanism of the hernia, as to whether it is direct or indirect, or especially in those who have had operations before, I prefer to go down to the sac under local anesthesia, and then the only advantage in local anesthesia is you may be able to have the patient aid you in determining the entrance of the sac and the course the hernia has pursued and the existence of it. You can have the patient cough or sneeze or strain, and it is in that respect a great assistant; otherwise, I prefer a general anesthetic because I can ligate the sac higher and dissect it loose from the surrounding tissues better.

ORTHODONTIA AS A SCIENCE.

By OREN A. OLIVER, D. D. S.,
Nashville.

Professor of Orthodontia, Vanderbilt University Dental School; Instructor on the Dewey School of Orthodontia.

Orthodontia is that science which has for its object the correction of malocclusion of the teeth. Malocclusion is simply a deviation from normal occlusion to such an extent as to interfere with the normal function of the teeth. The malocclusion of the teeth is spoken of in two general terms, "positions of malocclusion" and "classes of malocclusion."

"Positions of malocclusion" refers to the position of the individual teeth in relation to the line of occlusion and the median line of the face. There are seven different positions, and a tooth may occupy any four of these at the same time; mesioversion, distversion, labioversion, lingoversion, infraversion, supraversion, perversion and torsiversion.

"The classes of malocclusion" deal with the relation of the lower arch to the upper, and are divided into neutroclusion, distocclusion, and mesioclusion.

The science of orthodontia has taught us the necessity of the normal occlusion of the teeth, that they may accomplish their normal function. At this day and time there is no reason for extraction as a correction of malocclusion, and the dentist who does extract teeth to assist or aid in simplifying the case does not appreciate or understand the science and practice of orthodontia. When teeth are extracted to correct a case of this kind, 90 per cent of the patients are in a worse condition than before. In practicing this method of extraction for correction, one deformity is overcome at the probable cost of producing a greater one.

Modern orthodontia requires a complete knowledge of the physiological development of the dental arches and the surrounding structures. When the arches are not fully developed the surrounding structures are interfered with and, in turn, will cause some one of the above mentioned classes of malocclusion. The proper diagnosis in the practice of orthodontia is essential and absolutely necessary to the proper treatment and correction of cases of malocclusion, as in any specialty of the healing art. The proper diagnosis, classification and treatment of a case is based upon the surrounding physiological structure, the position of the teeth, the normal mesio-distal relation of the arches and the inclined planes of the teeth. A correct knowledge of the anatomy and physiology of the nasal cavities, accessory sinuses, is necessary to an understanding of the various abnormal conditions found in the mouth and nose.

The orthodontist cannot work entirely alone, but should have the co-operation of the family dentist, rhinologist and physician. The work of the rhinologist, especially, is not complete in many cases without the aid of the orthodontist, and many times the work of the orthodontist is not satisfactory without the aid and assistance of the rhinologist. There is no question but that there is a close relation between the operations of the two specialists, and many are the cases of the nose and throat conditions which cannot be successfully treated except in

conjunction with orthodontic treatment.

As an example of the above the combined work of the two specialists, Figure 1 shows a bad case of mouth breathing. The patient has a vacant stare, the upper lip short, the external

cavity affects the growth of the maxillary bone, and, likewise, anything that affects the maxillary bone will influence the nasal cavity.

In a normal breather the mandible is held in place by atmospheric pressure. When the



Figure 1

nares underdeveloped, lack of development through the nasal region, antral cavities underdeveloped, which gives an abnormal face, mandible undeveloped, a poorly developed chin and a pronounced case of facial deformity, evidence of poor assimilation and lack of oxygenation. Adenoids and enlarged tonsils have long been recognized as the cause of mouth breathing. Adenoids are defined as the hypertrophy of the lymphoid tissue located in the nasopharynx. Lymphoid tissue is present in all children, but does not cause mouth breathing unless it becomes infected and congested to such an extent that it extends downward and forward until it comes in contact with the soft palate and closes the nasopharynx. Owing to the fact that the patient is not able to breathe through the nasal cavities without effort, he breathes through the mouth, and as a result no atmospheric pressure is exerted upon the walls of the nose. If the child breathes normally the nasal cavity will develop, the floor of the nose will be carried downward and the septum will have room to grow. The growth of the nasal

mouth is closed one generally swallows, which brings the tongue up against the roof of the mouth and causes it to fill the whole oral cavity. As a result the tongue occupying this position exerts force on the lingual side of the teeth and forces them buccally, both the upper and lower teeth. In mouth breathing the tongue does not exert any force on the upper teeth, which allows the upper arch to remain undeveloped, and is therefore spoken of as a narrow arch. The tongue lies in the lower portion of the mouth, and in some cases overdevelops and does not touch the lower anterior teeth. The mandible drops downward as the result of the loss of atmospheric pressure, and the muscles which depress the mandible hold the mandible from developing forward, owing to the weight which they exert on the anterior portion. The mouth being held open, the molars are separated enough to allow the lower molars to lock distal to the upper molars. As the action of the muscles is abnormal, the upper lip does not exert pressure on the upper anterior teeth, thus allowing them to protrude. With

the mouth open and lips parted, the lower lip drops back against the lower teeth, and then the upper portion of the lower lip exerts pressure on the lingual surface of the upper teeth. The irritation of the upper teeth causes the

occupy a normal position or an abnormal position of a greater or lesser degree. It is the duty of the family dentist to give this matter deep consideration and to advise the parents whether or not the masticatory organs are de-



Figure 2

lower lip to become thicker, which, in turn, causes the upper teeth to protrude farther.

Figure 2 shows the same case after the removal of the adenoids, tonsils and after orthodontic treatment. Here the rhinologist performed the first operations and then the orthodontist completed the work.

veloping correctly. You can see hundreds of children growing into manhood and womanhood deprived of orthodontic treatment, and if you will make a careful study of the mouth of children you will see the arrested developments of the dental arches and jaws in the majority of cases. Such conditions are but the first steps to a progressive malocclusion, which will,

Malocclusion nearly always begins during



Figure 3

the period of tooth eruption, and very often it is progressive, remaining so until all the permanent teeth have erupted. The period of the eruption of the teeth must be considered as a critical one in a child's life. It must be regarded as a time when the relation of the teeth, the dental arches and the adjacent parts will

as time goes on, develop worse both in malocclusion and facial deformities, as in Figure 3.

I am often asked at what age I would advise the correction of malocclusion. My answer is, the younger the patient, the better and easier the correction; in other words, just as soon as the child shows a tendency for the teeth to

erupt in abnormal position. This old saying, "Wait until you get twelve or fifteen years old" is, in my opinion, doing an injustice to your patient. The earlier the treatment the less complicated the case is going to be and the better results you will get in both occlusion and facial outlines. By corrections of these cases early marked facial deformities can be overcome, and thus every child can be given an opportunity of developing normally, thereby permitting the normal functions of the teeth and assisting respiration and digestion. As to the length of time it requires to correct a case, it all depends upon the class and type of the individual case. However, in general, the time it takes for the completion of a case is from one to three years. Many cases, if seen early, are simple to correct, but if left till later in life become complicated and require a much longer time for treatment.

The causes of malocclusion are many and varied. The following are some of the etiological factors, which are divided into two groups, based, first, upon the time in which the factors occur, and, second, upon the manner of occurrence. As to time, they are divided into *inherited*, *congenital* and *acquired*; as to manner into *local* and *general* or *constitutional*.

Inherited causes are those conditions which are transmitted from parent to child. Congenital are those which occur in the embryo before life. The most frequent congenital conditions which have to do with malocclusion of the teeth are hare-lip and cleft palate. Another congenital condition is supernumerary and missing teeth. Acquired factors are those that occur after the birth of the individual.

The early loss of the deciduous teeth may be due to constitutional or local causes. The early loss of these teeth, either upper or lower, will produce a lack of development in the region in which they are lost. This loss destroys approximal contact and allows the space to be closed in, often resulting in an inlocked permanent tooth. Faulty filling of the deciduous teeth will also cause malocclusion, making it just as important to fill these teeth correctly as the permanent ones.

General or constitutional causes of malocclusion include those that affect the general functions of the individual to such an extent as to

interfere with the development of the teeth or the surrounding structures supporting the teeth. There are a number of diseases that affect the general health to such an extent as to interfere with normal forces of occlusion and therefore produce malocclusion. Also many diseases affect the development of the dental arch one way or another. Scarlet fever, measles and chicken-pox are among those that cause high fever and, in turn, exert a weakening effect upon the epithelial structure, thereby causing a faulty shape in teeth. Rickets is a general disease that causes a great many cases of malocclusion, being a disease of malnutrition characterized by faulty bone formation. As a result of faulty bone formation there is not enough support given to the teeth to cause them to assume their normal position.

The tardy eruption of permanent teeth is another frequent cause of malocclusion, while the loss of permanent teeth produces a large per cent of the irregularities found in the mouths of adults. For example, the early loss of the first permanent molar always produces a malocclusion which is very difficult to correct, therefore it is very important that the family dentist watch carefully after this tooth, for it is erupted between the ages of 5 and 7 years, when the child is losing the deciduous teeth. It is of great importance that all broken down or decayed teeth be restored with fillings which have proper approximal contact, and that all fillings be carved to the right occlusion. A neglect of any of these things will cause malocclusion.

Mouth breathing, thumb sucking, finger sucking, lip biting, pacifiers and lip sucking also tend to lead toward malocclusion.

The benefits derived from orthodontic treatment are as numerous as the causes of malocclusion. Summing up a few of them, we name normal occlusion, normal breathing, proper mastication, normal facial outlines, improved digestion and prevention of pyorrhoea and caries. These far-reaching results make it necessary to impress upon our patients that the greatest value of orthodontic treatment lies not in the esthetic side, but is derived from the benefits which occur when the teeth are placed in normal occlusion, thereby eliminating many dental and systemic ills augmented or caused by malocclusion.

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OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

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EDITORIALS**HOOKWORM DISEASE IN TENNESSEE.**

The continued prevalence of hookworm disease in Tennessee is a reproach and a shame. It has been demonstrated in a way that can but convince any who are open to conviction that this malady is powerfully operating to destroy the efficiency of large numbers of our young men and young women and to retard, physically, mentally and morally, the development of hundreds—yes, thousands—of our children. Yet the insanitary conditions which so largely contribute to the continuance and wider dissemination of the infection are tolerated by the people with an appalling indifference, and there is a disinclination, to put it mildly, upon the part of the medical profession of the state toward any worth-while effort upon their part to correctly and positively diagnose hookworm disease and to urge proper treatment upon those of their clientele whom they suspect or whom they know are its victims. On the other hand, there can be found here and there a person or a group of persons, and, very rarely, a whole community alive to the importance of the adoption of sanitary measures which will prevent and medical treatment which will cure hookworm disease; and here and there, too, can be found a doctor or a group of doctors and, very rarely, a whole county profession who carry out, with most gratifying results, the measures necessary to diagnose and cure hookworm disease as it is found in their daily practice. On the whole, the indifference and neglect displayed by the people and by the physicians of Tennessee concerning this disease, which constitutes one of our major public health problems, is appalling, unpardonable, almost if not quite outrageous.

The Tennessee State Board of Health,

through the co-operation afforded by the Rockefeller Sanitary Commission, made an investigation which covered the State from end to end, and demonstrated, through the use of reliable and scientific methods, that from less than five-tenths of 1 per cent in one county, where infection was lightest, to 73 per cent in another county, where infection was highest, of the school children in our rural schools had hookworm disease. This was done by microscopic examinations of specimens submitted by at least 200 children in each county—not children selected because of presenting symptoms, but children rosy and children pale, children from the best homes and children from the meanest hovels. In some few county schools every child and the teachers had hookworm disease. In more than one community whole families were found infected and fairly pauperized and dependent by reason of this disease. A demonstration was made, too, in numerous places of the benefits of curative treatment. All this was demonstrated to the people and the medical profession of the state. The facts were put before them all.

When it became apparent that many persons were disinclined—for various reasons, not the least of which in some places was the unfavorable attitude of doctors toward the educational work of the State Board of Health—to seek diagnosis and treatment, and that a large part of the medical profession would not urge nor even advise the people to seek diagnosis and treatment, then it was that the State Board of Health undertook the operation of free dispensaries, where all who would come might have free examination and free treatment if infected. These dispensaries were operated in sixty-three counties. In some of the counties more than 4,000 examinations—microscopic examinations, too—were made, while in several counties more than 2,000 were examined. The most remarkable thing about the findings in these dispensaries was this: the infection as demonstrated by results of 2,000 or 4,000 examinations coincided in nearly every county with the infection as demonstrated by results of examination of 200 school children in the same county. The differences were fractional.

In these free dispensaries 94,375 microscopic examinations were made, and 29,060 of these

were positive for hookworm. In addition, 3,670 specimens of feces were examined by a microscopist at the State Board of Health, of which 510 were positive for hookworm. In the dispensaries there were given out 26,411 first treatments, 18,701 second treatments, 13,042 third treatments, 247 fourth treatments, 42 fifth and 7 sixth treatments. Physicians reported to the State Board of Health cases of hookworm to the number of 1,952 treated by them in private practice.

The reports of beneficial results following treatment for hookworm disease were numerous and enthusiastic in their expressions of delight. Within the hour the writer has had a visit from a prosperous farmer, who came to repeat his oft-expressed gratitude that he and his entire family were relieved from dire distress to independence and usefulness because of the treatment received by them in one of the State Board of Health dispensaries, and he always adds: "My doctor told me to stay away from that dispensary." His is not nearly the only story of this same kind that has been brought by persons who were made well at the dispensaries, either. There are children grown now to young manhood and womanhood who eight years ago were puny dullards in their schools, but who were enabled to assume creditable rank in classrooms after they had lost their hookworms because of treatment received at the dispensaries. The writer has received letters expressing gratitude for the service done them that would almost wring tears from the eyes of a graven image, and he is truly thankful that he had the privilege of being even remotely connected with the work of redemption from disease through which these boys and girls were given a fair chance in life.

It has been three years now since the demonstration of the state-wide prevalence of hookworm disease was completed; since the demonstration of the direct and tremendous benefits of the proper treatment of hookworm disease was made. While there are many physicians in the state who make a routine practice of treating the disease, there are equally as many or more who withhold the benefits of treatment from many who need it and who would be greatly helped by it. There are doctors yet in Tennessee who tell their patients that "there is

no such thing as a hookworm," and lots of those same patients have promptly written to the office of the State Board of Health what their doctors have told them. And quite a number of them have sent in specimens for examination, some of which have been found to contain hookworm eggs in numbers great or small.

We have waited patiently for Tennessee to wake up to the meaning of hookworm disease as some of our sister states have done, and for our doctors to realize its importance as the doctors in other Southern States and in most of the great clinics and hospitals of the country have realized its importance. Now, as a duty which bears upon us, we say this word to Tennessee physicians—say it because we know whereof we speak and because we believe it should be said in the interest of the public health: Hookworm disease is a real menace to the health of the children and young men and young women of Tennessee. Thousands of them are now feeling its evil effects. It plays a part in the production of other more fatal diseases. It is causing a tremendous economic loss in our state. It is the real cause of trouble in many obscure cases which are being unprofitably treated for other conditions. Its diagnosis and treatment are simple. Whoever refuses to consider hookworm disease in his medical practice, and whoever withholds beneficial treatment from its victims, falls short of his duty as a physician and contributes to the production of poverty and to the continuation of misery and to the creation of high morbidity and mortality rates in Tennessee.

And, God help us, we wish we knew how to say it stronger.

THE MEDICAL PROFESSION OF TENNESSEE—ITS CONTRIBUTION TO MEDICAL PREPAREDNESS.

The following figures will be of interest:

From September 15 to October 15 ten men from Tennessee were recommended by the Surgeon-General for commissions in the Medical Reserve Corps, making a total of 309 men. From October 15 to November 15 one man from Tennessee was recommended for commission in the Medical Reserve Corps. From Novem-

ber 15 to the present date approximately 150 doctors have been examined for commissions in the Medical Reserve Corps. Only a small per cent of these applications have been acted upon as yet.

The figures above quoted, which relate to the number of doctors recommended for commissions up to November 15, created surprise in some quarters. Tennessee's part in the nation's program of medical preparedness was 484, on the basis of 20,000 for the first army—the estimated number of doctors for the first army has been increased to 22,000. Several states of the union furnished their quota months ago.

The figures in reference to the number examined since November 15 clearly indicate that the doctors of Tennessee did not lack patriotism; that they did not lack the spirit of self-sacrifice which the conditions of the present day demand.

There was undoubtedly a great deal of misunderstanding as regards the meaning of the Medical Reserve Corps. There was undoubtedly a great deal of misconception as regards the duties a doctor in military service is called upon to perform. Just as rapidly as these have been cleared away the doctors have nobly offered themselves for service.

It is true that the doctors are called upon to furnish the greatest per cent of their group for army service of any other profession, or single group of citizenship. The doctor who is young and active is desired for active service. Too, the services of the doctor of 55 with mature judgment and wide experience is desired.

The call has come to every doctor between the age of 22 and 55. To the doctor has been given the glory of choosing as to whether he will or will not serve as a doctor. The nation has, despite petition to do otherwise, depended on the doctor to volunteer.

The figures above given indicate that the confidence reposed in the medical profession has not been misplaced.

Several months ago many doctors received cards in which they were asked the question as to whether or not they intended to apply for commissions in the Medical Reserve Corps, and to indicate as to when they expected to apply in case they had not already done so. Many indicated that it was their intention to apply later. The Surgeon-General of the army rec-

ognized that there were circumstances in which a doctor should not be called immediately. He gave assurance that when a doctor requested that he not be called to active duty for a definite period of time, and stated the reason for such request, that if circumstances would permit it would be granted, thus enabling those who contemplated applying for commissions in the Medical Reserve Corps at later dates to do so early and at the same time without disturbing their plans to remain at home for the period requested.

Doubtless there is not a single man who has gone but that has heard the voice from somewhere say to him: "Don't go; you are not needed yet." That voice may come from grateful patients; it may come from wife and family; it may come from the persuasive lips of mother, and the call occasionally may be the call of opportunity to take the place of those who sacrifice to go. The decision between the call of country and the call to stay at home is not an easy matter in many instances.

To receive a commission in the Medical Reserve Corps a doctor must be a graduated licensed practitioner between ages of 22 and 55, physically fit, professionally qualified and willing to go if needed.

The Surgeon-General is anxious that the doctors reach a decision at an early date. The question is, "Am I willing to go if needed?" The answer is "Yes" or "No." H. H. S.

THE DEMAND FOR BETTER ORGANIZATION.

There has never been a time when there was a better reason for medical organization than is to be found in the obligations which the war has imposed upon the members of the profession who, for whatever causes, are to remain at home rather than to be enlisted as medical officers of the army or navy.

The *California State Journal of Medicine* has this to say:

"The physician finds the duty of public service, which is his constant companion, enormously intensified in war time. Then he must educate, and watch, and prevent, and organize as he never did in peace time. Then he must take counsel of himself and his fellows for the health

and security of the civil population, that they may be protected from themselves as from the harpies who would prey upon them, that, in their ignorance and indifference, they fall not spoil to the politician and money-seeker. All of the public obligations of the physician, by that very token, are greater in time of war. And they are greater because on the proper fulfillment of them depends the health and fighting efficiency of the military, and the health and supporting efficiency of the civil population.

"Hence comes the necessity now for the physician to assume his public role as he has never done before. Hence the necessity for him to organize as he has never done before. Organization and efficient assumption of these public obligations by the medical profession are thus a definite and clear public duty. They are a necessary form of patriotic service. The doctor who conscientiously or by necessity is not in uniform cannot escape this obligation.

"If he is neither in service nor in the organized ranks of his profession, then he is a slacker from the obligations which rest on our profession today. The war is a trumpet call for every reputable physician to enroll in his local county medical society, and help direct and extend the useful functions of the state society.

"The state society needs every doctor in the state. It is only half efficient when only half the doctors in the state are included in its membership. . . . Each county society should initiate an aggressive and carefully planned campaign, as a patriotic duty, to increase its membership to the available limit."

All of which is as we see it. About one-fourth of our members are gone or will soon go into war service. Their going imposes new obligations upon those of us who cannot go. We are obligated to them by their going, and we are newly obligated to the public by their going. And there's no room for argument on this proposition: The physicians can best meet these obligations by making themselves active units in organized medicine.

RED CROSS CAR "PASTEUR."

The Red Cross laboratory car "Pasteur," a most marvelously devised and completely equipped institution, has begun its work for

health conservation among the troops in Southern cantonments. Dr. J. W. Jobling, professor of pathology in the Vanderbilt School of Medicine, is the director in charge, and has as his assistant Dr. E. S. Maxwell, also of Vanderbilt. Dr. Duval, of Tulane, is to be associate director, while Dr. Lynch, of South Carolina, will also serve as one of the workers who are in this traveling laboratory to make necessary investigations in connection with outbreaks of communicable disease in the mobilization camps in Southern territory. The "Pasteur" has, at this writing, already made one long trip to a Texas cantonment, with Drs. Jobling and Maxwell in charge, where some most important studies were made of pneumonia.

The "Pasteur" is a truly remarkable institution, practically perfect in all of its appointments. From the choosing of a name for this moving laboratory clean through to the last detail of the plug for telephone connection with any local system near which the car may be placed, every detail has been worked out with due regard for the proprieties and with the most painstaking thoroughness. Every necessary piece of apparatus and every necessary laboratory supply is on board; an engine for running a generating plant to provide current for motor and lighting purposes; storerooms for laboratory supplies and fuel; a place under the car for animals for laboratory tests; dining room, kitchen and living quarters for the physicians and caretakers; a room provided with desks, filing cases and bookcases; even shower baths for the laboratory workers and others for the porters—everything that is needed for thoroughly scientific work and all that can contribute to the convenience and comfort of the workers is to be found built into the "Pasteur." It is truly a tribute to the ingenuity and efficiency of the Pullman organization, which, we are told, took great pride in planning and building this and three other cars like it for the Red Cross.

The other laboratory cars like the "Pasteur" are appropriately named "Reed," "Lister," and "Metchnikoff," and are in charge of Drs. Simon Flexner, Hektoen and Gay respectively. The selection of Dr. Jobling and his associates for this important scientific work in the South is a most distinguished compliment

to these gentlemen, and the JOURNAL is very sure that the American Red Cross has bestowed the honor most worthily.

A SPLENDID RESPONSE.

On November 15, 1917, Tennessee occupied the unenviable position of being only three places removed from the bottom of the list of states in the matter of the per cent of physicians recommended for commissions in the Medical Reserve Corps, notwithstanding the efforts of the State Committee of the Medical Section of the Council on National Defense, and notwithstanding the splendid services of Maj. Frank D. Smythe, at Memphis, and Maj. L. E. Burch, at Nashville. Following the policy pursued in other states, an Itinerant Board of Examiners was arranged for and appointed by the Surgeon-General, consisting of Lieut. H. H. Shoulders, Nashville, and Lieut. S. S. Evans, Memphis. The itinerary began at Memphis on November 16, and the following points in the state were touched: Dyersburg, Union City, Jackson, Brownsville, Paris, Clarksville, Columbia, Fayetteville, Murfreesboro, Chattanooga, Cleveland, Morristown, Bristol, Johnson City, Knoxville and Nashville.

At each of these places meetings were held which were attended by physicians from adjacent territory. A most gratifying number of applications were received and examinations made, showing most conclusively that the patriotism of Tennessee physicians was not properly measured by the standing of the state on November 15.

The JOURNAL congratulates Lieut. Shoulders, Lieut. Evans, Maj. Smythe and Maj. Burch, the examiners in the state, upon the splendid results that have followed their efforts, and congratulates the state upon the fact that the medical profession has made such splendid response to the call of duty by offering for service in such large numbers.

Tennessee's quota is not yet full, *but it will be*, and that soon. Of this we need have no fear.

TENNESSEE IN THE RESERVE CORPS.

The following names of Tennessee physicians recommended for commissions in the Medical Reserve Corps have not appeared in the lists

heretofore printed in the JOURNAL. The JOURNAL wants to have the record complete and will continue to give the names of all Tennessee enlistments as promptly as the necessary information can be had:

Lieutenants—Drs. William Clayborne Bundrant, Lawrenceburg; Charles Clay Carr, Cumberland Gap; Joseph Harvey Chance, Springfield; James Pringle Crawford, Nashville; Owen Scott Deatheridge, Nashville; Frank P. Eves, Nashville; C. M. McGloster (col.), Brownsville; T. M. Harper, Medina; Joseph E. Heard, Brownsville; Andrew Blucher Jones, Nashville; Allen Lawrence Lear, Sewanee; Gilbert Joseph Levy, Memphis; Clinton Gallaher Lyons, Knoxville; Neely Cornelius Mashburn, Bolivar; William Huffman Niles, Tellico Plains; Cleve Carrington Odom, Nashville; John Walter Oursler, Humboldt; William Veasey Pruett, Brownsville; Hugo Benton Stokes (col.), Nashville; Robert Edward Sullivan, Nashville; William Everett Troxler, Lewisburg; Samuel Lewis Wadley, Memphis; John Thomas Watkins, Nashville; Albert Browning Dismore, 2393 E. 12th St., Chattanooga; Bernie Langford McDonald, Idol; Howard Aiken Ijams, Knoxville; Harry Laurin Lott, 506 W. 5th St., Knoxville; Warren Grady Alford, Memphis; Conrad Oswald Bailey, Memphis; Salvador Leon Boccellato, 912 Mississippi Ave., Memphis; Lyman Harvey Chapman, 1607 Central Bank, Memphis; Constantine Perkins Waller, Woodbine Station, Nashville; William G. L. Blackwell, Ripley; Granville Dexter Lequire, Rutledge; Archie Lewis Erwin, 412 Jackson Bldg., Nashville; Clyde Russell, Speedwell; William B. Nash, Stanton.

Captain—William Franklin Clary, 1145 Madison Ave., Memphis.

Major—Dr. Cary Alexander Snoddy, Knoxville.

NOVEMBER AND DECEMBER ENROLLMENT.

On December 12, 1916, there were 1,594 names on the membership roll of the State Association. On December 12, 1917, there were 1,595. The man to whom membership card No. 1,594 was issued in 1916 received card No. 1,593 in 1917. Since his name was reported with one other from the same county society, he

might have held the same number this year and would have received it had it been noticed where his name was entered last year.

Since the November list was printed in the JOURNAL the following members have been reported for 1917 membership:

Drs. E. M. Holmes, Murfreesboro; J. F. Adams, Bradyville; A. N. Gordon, Midland; A. D. Sharp, Blackmon; E. C. Johnson, Chattanooga; M. M. DeColbert, Deer Lodge; G. Sundstrom, D. K. Summers, G. M. Roberts, W. J. Hilles, J. C. Eldridge, Jr., Raymond Wallace, M. D. Davis, Chattanooga; Clyde Russell, Block; E. L. Inman, Westbourne; C. N. Crook, Moscow; D. C. Haggard, Unionville; O. L. Blackwell, Worley; J. H. Revington, A. B. Woolner, W. May Waite, J. B. Vigle, E. A. Gilbert, Chattanooga; P. R. Hysinger, East Chattanooga; Luther Edwards, Finley; L. E. Boone, East Chattanooga; L. C. Williams, East Lake; G. P. Wilbanks, Rossville, Ga.; F. B. Stapp, E. 8th St.; W. H. Cherry, Georgia Ave.; W. J. Winter, Volunteer State Bldg.; B. F. Travis, James Bldg.; W. F. McManus, Temple Court, Chattanooga; T. B. Brown, Columbia; Von Schmittou, Memphis; L. T. Bolton, Memphis.

SOUTHERN MEDICAL HISTORY.

The history of medicine in the South should be written because it is a most worthy history. Some of the greatest achievements in medicine are to the credit of Southern physicians, and their names and deeds should be inscribed in the archives of their country. The record should be made, and made right, for the record's sake.

This greatly needed work should be put into the hands of some Southern physician—one who has made good as a doctor, who knows the English language and can write it as it should be written, who appreciates the necessity for properly evaluating facts and who has the patience and persistence necessary for running down the facts through all the maze of small details, and who can willingly devote some years to this exclusive undertaking. Some scheme for financing this undertaking should be devised.

The *Kentucky Medical Journal* for Novem-

ber was a historical number, devoted to the "Medical Pioneers of Kentucky." It is a very splendid volume of very great value, and it is to be hoped that it will have wide circulation and that it will stimulate a desire upon the part of Southern physicians everywhere to have the history of medicine in the South permanently and properly recorded.

EVERY DOCTOR IN THE MEDICAL RESERVE CORPS.

What an ideal situation it would be if every doctor in the United States who is mentally, physically and morally fit was in this corps.

The time is coming, and in the immediate future, when the Medical Reserve Corps of the army must be immensely augmented, and so as to enable the Surgeon-General to have at his command for immediate assignment, as conditions demand, a sufficient number of trained medical officers, let us take the above thought seriously.

We all know, from past history, the conserving value of an efficient medical corps, and this means number as well as training.

A statement made by one high in authority in the Surgeon General's office, "that our fighting forces would be disseminated by sickness and casualties in six months, were it not for an efficient army medical corps," clearly emphasizes the importance of every doctor in the United States meeting the requirements above referred to, accepting a commission in the Medical Reserve Corps of the United States army.

The struggle in which we are now engaged, and in which we are preparing to take such a prominent part, depends for its success as much upon the medical profession as it does upon our combatant forces, and while we do not know that any such intention as herein suggested is in the mind of the Surgeon-General, it would at least give him the necessary corps of medical officers upon which to draw and thus serve the best interests of our country and the best interests of the medical officer serving.—*American Medical Editors Association Bulletin.*

HE'S A "HEARTEN."

The writer of the following letter applied to a Nashville physician for relief from pain produced by the results of a fall or of some severe strain. The good doctor diagnosed sacro-iliac strain and applied the most approved treatment, which relieved the pain until the patient unwisely engaged in the performance of some rather heavy labor. The fee asked and received was the munificent sum of ten dollars

“—————, Tenn., Nov. 22, 1917.

“Dear Dr. ———: This is the boy that you have put the badages to so much and havent benifeted me any and I give the last a fare chance I thank. I have been in the bed every since I was down there and worse today and I was then, and you said that the belt you would fix me would be just as the badage, only it woulde make my skin sore, so I dont bleave any thang about it as I dont thank it would doo any good and all of the belts and badages in Nashville wont doo me any good across my back, for the hearten is in my leg and hip, the leaders and muscles of my leg is where the hearting is and my stomach is out of order some way for when I eat a big meal my leg will heart worse spechely airsh potato, and I will go to belching after I eat.

I have sent to N. Y. for a month treetment for rheumatism I thank what is the mater with me.

A person that hurts like me will try any thing

Dr, if you noe what for me to doo or can site me to some one that does no I will presheate it and doo as much for you you may noe but I dont thank you doo, or you would have doon and doon it of course I cant fool with you and you not dooing me any good and charging such a price, I talk to some more Dr. and they said look like five dollars would been plenty for you. I am every your frend,

(answer soon.)

We can but wonder what the “month treetment” for rheumatism cost him. And we fear that he will yet have to come back to have the “badages” “put to” him again before his “hearten” quits a “hearten.” We are amazed that a fellow who can afford enough “airsh potato” for a “big meal” should kick on a ten dollar fee. Ten dollars don't buy many “airsh potato” at our grocery.

THE FIRST REPORTS.

Dr. A. J. Quinn, secretary of the Polk County Medical Society, had his report for 1918 in on November 9, 1917, and showed

every 1917 member paid up for the new year. (On December 5 the report of Dr. Walter Dodson, secretary of the Wilson County Medical Society, was received, carrying the names of twelve members, and on December 6 the reports of Dr. R. A. Whittaker, the Decatur county secretary, and Dr. Douglas Hayes, of Grundy county, were received. Since these reports were received a number of others have come in, and it is to be hoped that every county will be reported before the month is gone.

The most business-like way—and the easiest—is to send in reports early. Then we can know just where we stand, errors will be avoided, congestion and confusion in the central office will be prevented, mailing lists will be correctly kept and the general affairs of the Association can be more satisfactorily administered.

County secretaries cannot report promptly, however, unless you will pay your dues. And don't forget the medical defense assessment.

DR. J. W. McFARLAND.

Dr. J. W. McFarland, for many years a practicing physician at Lebanon and a leader in his community, died at the home of his son, Dr. Jerry McFarland, near Lebanon, on December 19, 1917. Dr. McFarland was 76 years old at the time of his death. He was for a long time an active member of his County Medical Society and of the Tennessee State Medical Association.

THE OWEN AMENDMENT.

“Provided, That hereafter the commissioned officers of the Medical Corps of the Regular Army shall be distributed in the several grades as follows:

	Per Cent
Major generals	0.25
Brigadier generals25
Colonels	4.00
Lieutenant colonels	8.00
Majors	23.5
Captains	32.0
Lieutenants	32.0
	87.5
	100.00

"Provided, That when called into service the numbers of the officers of the Medical Reserve Corps shall be seven to the thousand of men in the National Guard and National Army and the relative grades of the officers of the Medical Reserve Corps shall be the same as the grades of the Regular Army".

The above is an extract from the Owen Amendment to the "Preparedness Act". Below is an extract from a statement by Senator John K. Shields made in reply to a letter asking his favorable consideration for the Owen Amendment.

"You can rest assured that I will support the amendment proposed by Senator Owen providing for higher rank and increased compensation for members of the medical corps of the Army, and aid in securing its adoption as a part of the pending bill. I believe, it is not only a wise measure of the Army but a matter of common justice to the medical profession and a recognition of the great service they will perform for their country."

There is no good reason why the Medical officers of the U. S. Army should not be given rank in keeping with their responsibilities. It is believed that all Tennessee Congressmen will take the same position as that to which Senator Shields has obligated himself if this matter is properly brought to their attention. Write to your Congressman!

The following is an extract from a letter received by the State Committee from the Committee of State Activities and Examinations, Council of National Defense, Washington, D. C.

"We are not asking for any definite number of men now, but do want all men under 55 who will fill the requirements physically, morally and professionally, and are graduates of reputable schools."

In the past the call applied to every man between 22 and 55, but only a certain number were necessary to supply the medical needs of the first army. Tennessee's share of that number on a percentage basis was 484.

The call now applies to every doctor between 22 and 55, and in addition every man is asked to so identify himself with his government that his services can be called for—if needed—by be-

coming a member of the Medical Officers Reserve Corps.

THE MEMPHIS MEETING.

The annual meeting of the Tennessee State Medical Association will be held at Memphis, April 9-10-11. It is important that all county societies should select Delegates and Alternate Delegates to the Association and that the names of those chosen should be forwarded to the Secretary.

All members who wish to contribute to the scientific program should send in the titles of the papers to be presented.

Any society or any individual member having any important matter for bringing before the House of Delegates should acquaint the Secretary with the nature of the business and should have it ready to present in a business-like manner. What is worth doing is worth doing right. Let's not wait until the last minute and bring things up on impulse.

The place of meeting will be announced by the Committee on Arrangements of the Memphis and Shelby County Medical Society in the next Journal.

SOMETHING DIFFERENT.

A "Literary Number" of a medical magazine is "something different." Medicine and Surgery for December is that. Only six of the dozen contributors are M. D.'s and the subjects discussed by these six are not the subjects upon which medical men usually write. Neither are the subjects of the Ph. D.'s ordinary subjects. The whole thing is different and delightful.

Marion Reedy has "A Dramatist On Doctors". He sizes up one George Bernard Shaw, shows up the same gentleman, and also talks about him as none other than Reedy can do. He then dissects, prepares frozen sections and microscopizes "The Doctor's Dilemma", in a truly scientific manner, standing the truthful elements out where they may be seen, and displaying the lies and inconsistencies with the same openness. Reedy, incidentally, "takes a few" out of the medical hide on his own account, but he stands up strong for all that is good in the doctor and in medicine.

MEDICAL DEFENSE.

Knoxville, Tenn., 1-17-18.

Dr. Olin West, Sec'y.,
Nashville, Tenn.

Dear Doctor West: Please announce in the editorial column concerning the Medical Defense of our members. Thus far the members have not paid up very well, and all members should have paid their Defense on, or before, January 1st, in order to be protected during the entire calendar year.

In 1917 850 members paid their defense fee, some of them quite late. This was 206 more than had paid in any previous year.

During the year we declined three suits, because the members had not paid their Defense fee, to cover the period of the alleged malpractice. Two cases were threatened, but were never filed in court, due to counter pressure on the plaintiff or his attorney. Six cases were won; three by verdict for the defendant, two by the plaintiff taking non-suit, to prevent a final verdict, and one was thrown out of court by default of the plaintiff, who could secure no attorney. We have seven suits pending, and expect to win all of them.

We are glad to announce that the men who have paid their Medical Defense fees are the best in the State. Not all of the best but of the very best, and the reputation of such men and the backing of the united profession renders the work of the Defense Committee easier and the favorable verdicts for our members more certain.

Please urge the members to avail themselves of this feature of our work.

Yours very truly,

MEDICAL DEFENSE COMMITTEE.

S. R. MILLER, Chairman.

DR. J. E. SHANNON.

Dr. J. E. Shannon, for thirty years a practicing physician in Weakley county, died at a Nashville hospital on December 1, 1917. Dr. Shannon was a member of the Weakley County Medical Society, the Tennessee State Medical Association and the American Medical Association, and was one of the progressive citizens of the community in which he lived, having been always found at the front in every movement

for the upbuilding of his section of the state.

Dr. Shannon's death was the result of accidental infection received during the course of an operation for the removal of diseased tonsils. During the operation, performed at his office at Sharon on November 26, Dr. Shannon's finger was injured by the point of an instrument he was using. Alarming symptoms developed within a few days, and Dr. Shannon was brought to Nashville, but grew rapidly worse and died the next day.

SOCIETY PROCEEDINGS

DECATUR COUNTY.

The Decatur County Medical Society met at the office of Dr. A. G. Hufstedler at Parsons on December 5, 1917, with the president, Dr. J. G. McMillan, in the chair. After the reading of the minutes and the transaction of routine business, action was taken by the society providing for the submission by each member of a list of non-paying patients in his respective territory and for the printing of all the names so submitted in a list to be put into the hands of all members of the society.

A paper by Dr. J. M. Crider on the "Diagnosis and Treatment of Pneumonia" was listened to with great interest and was very fully discussed by the members present. Dr. R. Y. Fisher read a very thorough paper on "Scabies."

The subject, "Erysipelas—Its Diagnosis and Treatment," was assigned to Dr. T. Rogers, and "The Treatment of Burns" to Dr. R. A. Whitaker for the next regular meeting.

The election of 1918 officers resulted as follows: President, Dr. T. Rogers; first vice president, Dr. A. G. Hufstedler; second vice president, Dr. J. M. Crider; secretary-treasurer, Dr. R. A. Whitaker; delegate to State Association, J. L. McMillan; alternate, Dr. A. G. Hufstedler.

The next meeting will be at Decaturville, on the first Wednesday in January. Our society meets each month, with an average attendance of 90 per cent of all members.

R. A. WHITAKER, Secretary.

DYER COUNTY INSURES MEMBERS IN M. R. C.

The Dyer County Medical Society met at Dyersburg on December 6 with twenty-five

members present. Dr. T. D. Rice, Tigrett, was elected president; Dr. C. T. Nash, Bonicord, vice president, and Dr. E. LeRoy Wilkins, Lyersburg, secretary-treasurer. After the disposal of routine business the following action was taken: The Dyer County Medical Society agrees to carry \$5,000 insurance for each of its members who is called to the colors. Then the whole crowd went to the Virginia Hotel and ate a fine dinner—and they were deserving of a good dinner for their action looking to the protection of the dependent loved ones of their members who will go to risk their lives in the service of their country was a magnanimous action.

Dr. Wilkins, secretary, reported nineteen paid-up members for 1918 for Dyer county on December 12, ten of whom also paid the medical defense assessment.

HAMILTON COUNTY.

The Chattanooga Academy of Medicine and Hamilton County Medical Society, at the regular weekly meeting on December 7, 1917, elected 1918 officers as follows: President, Dr. J. W. McQuillan; vice president, Dr. J. C. Brooks; secretary-treasurer, Dr. H. P. Larimore; censor, Dr. Frank Trester Smith. Drs. Larimore and Smith were simply retained in places in which they have already given splendid service for a long time.

Hamilton county reported 123 members for 1917, had weekly meetings throughout the year and has made a good record in general. Incidentally, Hamilton county has one of the very best secretaries in captivity in the person of Dr. H. P. Larimore.

RUTHERFORD COUNTY.

At the December meeting of the Rutherford County Medical Society officers for 1918 were elected as follows: President, Dr. M. B. Murfree; vice president, Dr. J. C. Overall; secretary-treasurer, Dr. E. H. Jones; delegate to State Association, Dr. S. B. Smith; alternate, Dr. J. F. Adams. E. H. JONES, Sec.

SULLIVAN-CARTER-JOHNSON.

Officers elected for 1918 by the Sullivan-Carter-Johnson County Medical Society are: Pres-

ident, Dr. J. A. Delaney; vice president for Johnson county, Dr. W. W. Vaught; vice president for Carter county, Dr. J. V. Jordan; vice president for Sullivan county, Dr. F. W. Poindeter; secretary-treasurer, Dr. W. K. Vance. In view of the possible protracted absence of Lieut. W. R. Booher, M. R. C., Dr. C. M. Cowan was chosen censor in his stead to act until Dr. Booher's return.

The society was pleased to have Lieut. H. Shoulders, M. R. C., secretary of the Medical Section of the State Committee on National Defense, present at the December meeting, and to hear him discuss fully and interestingly the needs of the Medical Reserve Corps with respect to volunteers from the ranks of Tennessee physicians.

WILSON COUNTY.

The Wilson County Medical Society had a splendid meeting on December 5, 1917, with good case reports, good clinics, good committee reports and a good scientific program. Two new members were elected into full fellowship, and every member present paid his 1918 dues. A list of members, with a check to cover dues to the State Association, is enclosed, and I hope that our 1918 report will be among the first to be received. Officers for the year 1918 are as follows: President, Dr. M. H. Wells, Watertown; vice president, Dr. J. L. Davis, Watertown; secretary-treasurer, Dr. Walter Dotson, Lebanon. WALTER DOTSON, Sec.

WHITE COUNTY.

The White County Medical Association met in regular session in Sparta December 13. A splendid meeting was held. Dr. Lewis read a splendid paper on "The Etiology of Rheumatism." Dr. Smith, of Doyle, also reported some very interesting cases of hereditary syphilis, all of which elicited a good discussion.

Officers were elected for 1918 as follows: Dr. W. M. Johnson, president; W. L. Brock, vice president; A. F. Richards was retained as secretary and treasurer, Dr. R. E. Lee Smith was elected delegate and Dr. W. M. Johnson alternate to the State Association. The meeting adjourned in good order after all had enjoyed a good meeting.

The White county doctors are all prospering and enjoying the County Society, good feeling and harmony generally prevailing.

Dr. W. J. Breeding is in Sparta, devoting all of his time to the duties of the Federal Exemption Board.

Drs. D. R. Gist, S. E. Gaines and A. F. Richards have been appointed on the Medical Advisory Board at Sparta, Tenn.

A. F. RICHARDS, Secretary.

NOTES AND COMMENT

Lieut. E. Leroy Wilkins, M. R. C., Dyersburg, is at the training camp for medical officers at Ft. Oglethorpe, Ga.

Lieut. R. L. Motley, M. R. C., Dyersburg, is now in training at Camp Greenleaf.

This is to advise any of our readers who have not heard Maj. W. J. Bell, now on duty as an instructor at Ft. Oglethorpe, that they will be fully repaid for any trouble it may be necessary to take in going to hear him speak. At Nashville and elsewhere in the state he has held his hearers entranced as he has recited his experience on the firing line, in evacuation hospitals and in other places of duty. He gives one a vision of this war and of the duty of the physician to his country.

Capt. John M. Lee, M. R. C., Nashville, has been detached from Hospital Unit S, the Vanderbilt unit, and has been assigned to duty at Ft. Oglethorpe. Capt. Lee has won recognition as a superior medical officer, as is evidenced by his promotion from Lieutenant and by his selection as an instructor at Ft. Oglethorpe.

Several Tennessee surgeons attended the meeting of the Southern Surgical Association at St. Augustine, Fla., December 18-20th. In his presidential address Dr. W. D. Haggard called attention to the fact that of the two hundred members of the Southern Surgical Association over fifty were disqualified for military service by age and obvious physical disability, but that over seventy men had accepted commissions in the medical reserve corps.

Lieut. L. J. Lindsey, M. R. C., Covington, has been ordered to Ft. Oglethorpe.

Lieut. L. S. Nease, M. R. C., Del Rio, is at Camp Greenleaf, Ft. Oglethorpe, Ga.

Lieut. P. J. Trenzsch, M. R. C., lately assistant superintendent at Central Hospital, Nashville, is now at Camp Greenleaf.

Lieut. S. H. Rowland, Memphis, is on duty at Ft. Oglethorpe.

Lieut.-Col. John W. Hamner, Medical Corps, U. S. A., has been assigned to the command of Base Hospital No. 116, New York City.

Every patient in the Central Hospital for the Insane at Nashville received a Christmas present. Dr. Farmer, the superintendent, appealed to the public for the wherewithal, and the public responded far beyond his expectations. There were Christmas trees for the white patients and for the negro patients, and none was forgotten.

Dr. A. L. Waller, Juno, was reported as seriously ill in December.

Dr. M. L. Hughes, Clarksville, has been made division surgeon for the Tennessee Central Railroad.

Dr. G. C. English, Mt. Pleasant, has been commissioned Lieutenant, M. O. R. C., and ordered to Camp Greenleaf.

Dr. Ira Park, Union City, Lieutenant, M. O. R. C., is at Camp Greenleaf, Ft. Oglethorpe, Ga.

The Memphis and Shelby County Medical Society had its annual banquet on December 17 and elected Dr. J. L. Jelks president; Dr. Willis Campbell, vice president, and Dr. O. S. Warr, secretary-treasurer.

Dr. N. B. Morris, Buntyn, is assistant surgeon in the navy, and is stationed at the Naval Hospital at Norfolk.

The Anderson County Medical Society has elected 1918 officers as follows: Dr. E. Dickson, president; Dr. W. B. Campbell, vice president, and Dr. J. M. Cox, secretary-treasurer.

Among the list of promotions in the Medical Officers Reserve Corps, we find the name of Captain George Randle McSwain, formerly Lieutenant. Dr. McSwain is from Paris, and enlisted in the Reserve Corps in August, 1917.

Dr. Wayne T. Robinson, Shelbyville, was married to Miss Katherine Olive Lane at Union City on December 10, 1916. Dr. Robinson has recently returned from New York, where he took a course in Bellvue.

Dr. A. E. Goodloe, Murfreesboro, Lieutenant in the Medical Reserve Corps, is now at Camp Greenleaf, Ft. Oglethorpe, Ga.

The city of Memphis has, through its City Commission, appropriated the sum of \$10,000 to be used in fighting malaria. Shelby county will supplement this with an equal or larger sum, and the United States Public Health Service, in co-operation with local health departments, county and city, will conduct an active antimalaria campaign in Shelby county during the coming year. And they'll get results, too.

Please see your county secretary and pay your 1918 dues and medical defense assessment.

Ask your professional friend who is not now a member of your society to come in. He will be better off and the society will be better off with him in.

Don't allow the membership of any man who has gone from your society into the Medical Reserve Corps to lapse. Pay his dues out of the funds of the society.

Buy it from our advertisers. They have the best there is for sale and deserve your patronage.

Lieut. H. M. Francisco, M. R. C., Nashville, is on duty at Camp Bowie, Ft. Worth, Texas.

"D——n the public! D——n the State Board of Health! I'm in business for the biggest profits I can get and won't handle any State Board of Health vaccines." So, we are informed, spoke a Columbia druggist. Does he deserve the support of the doctors of his county? We think not.

The "Literary Number" of Medicine and Surgery is good reading and its editors are to be congratulated upon their enterprise and upon their good judgment in getting out "something different", as well as upon the literary merit of the magazine.

Dr. W. A. Sams, Unicoi, has been made Assistant Surgeon at the Soldiers' Home at Johnson City, succeeding Dr. E. E. Byrd, now in the Medical Reserve Corps.

At the December meeting of the Blount County Medical Society all 1917 officers were re-elected: Dr. S. S. Kittrell, President; Dr. C. C. Vincent, Vice President; Dr. F. A. Zoller, Secretary-Treasurer.

Lieut. F. J. O'Connor, M. R. C., Jackson, has been assigned to duty at Austin, Texas.

Lieut. E. E. Brown, M. R. C., Nashville, has been attached to Hospital Train No. 22.

It is now Major, instead of Captain W. G. Somerville. Dr. Somerville, Memphis, has won promotion by his splendid work at Ft. Oglethorpe.

Sixteen hundred and six members for 1917 enrollment were reported up to December 31, 1917. Good, but not good enough.

BOOK REVIEWS

A TEXT-BOOK OF PATHOLOGY. By W. G. MacCallum, M.D., Professor of Pathology in the College of Physicians and Surgeons, Columbia University. With 575 illustrations, chiefly from drawings by Feinberg. W. B. Saunders Company, Philadelphia. 1917.

In reviewing a text-book that departs from the usual type, one must try to place himself in the mental attitude of the author in order to fairly appreciate the differences drawn. This is a text-book of pathology, but the writer admits in his preface that "pathology and clinical medicine are,

after all, the same thing viewed from slightly different angles; and so we find here an excellent book for the general practitioner—probably better than for the pathologist. Many subjects and sections usually incorporated in texts on pathology are purposely omitted in this volume—the biology of micro-organisms and other parasites, of malformations, the effect of heredity on disease, of many diseases of the nervous system, rabies, etc. The author's statement to the effect that these things are admirably treated in other texts is quite true, but so are all the other subjects which he includes in his book. This book is a presentation of the author's personal views and is an elaboration of the lectures given by him at the College of Physicians and Surgeons.

The book is divided into two parts. The first and larger part considers all conditions (except tumors) as resulting from some kind of injury or insult and the consequent reaction or defense upon the part of the various tissues against these injuries. While we are ignorant of the cause of tumors, it seems entirely consistent with the "insult and injury" theory that tumors should be considered—at least some of them—as a defense or as a reaction to injury.

One cannot speak too highly of the illustrations. They are not only beautiful, but they are instructive and are probably the best to be found in any book.

This book will add to any individual store of knowledge. As stated, the general practitioner will find it better suited to his needs than will the pathologist.

S.

DISEASES OF THE SKIN. By Richard L. Sutton, M.D., Professor Diseases of the Skin, University of Kansas School of Medicine. With 883 illustrations and 8 colored plates. Second edition, revised and enlarged. C. V. Mosby Company, St. Louis. 1917.

In taking up Sutton's book one is at once impressed with the profusion of illustrations—more, perhaps, than can be found in any volume on the histo-pathology of the skin. Clearness of detail is lacking in many of the photographic illustrations and in a subsequent edition this, the only feature which can be unfavorably commented on, should be corrected. Dr. Sutton, with his large and varied experience, writes in a masterly and entertaining manner. Fortunately for his reader, he is very clear and very direct in his descriptions, the elaborate and, sometimes, ambiguous descriptions to be found in so many texts having been entirely left out here. References and historical notes make the volume complete, although it contains many pages less and many illustrations more than are to be found in many other books on the same subject. The section devoted to new growths of the skin comprises nearly three hundred pages. The

large number of lesions treated of in this section, together with the numerous plates illustrating the histo-pathology, make it a very valuable part of the book. Syphilis is treated in seventy-five pages and numerous illustrations and case reports make this particular section very important. Particular study has been made by Dr. Sutton of the pathology of the skin and many of his studies are included in this book, which cannot be found elsewhere.

S.

APPLIED BACTERIOLOGY FOR NURSES. By Charles F. Boluan, M.D., Director of Public Health Education, Department of Health, and Marie Grund, M.D., Bacteriologist Research Laboratory, Department of Health, City of New York. Second edition, thoroughly revised. W. B. Saunders Company, Philadelphia.

Because of the importance of the work of the nurse and the necessity for her having a definite understanding of the nature of disease processes in general, the study of bacteriology should be made an important part of her training. It is probable that too little time is devoted to this subject in many of the training schools for nurses. The book under review can be used to great advantage in a nurse's course. It considers the subject from the practical side and takes up with sufficient completeness the problems with which the nurse must deal as they are affected by a knowledge of bacteriology. The book is worthy of adoption as a text by any who are looking for a comprehensive and practical work of its kind.

DISEASES OF THE SKIN. By Milton B. Hartzell, M.D., Professor of Dermatology in the University of Pennsylvania. With 51 colored plates and 242 cuts. J. B. Lippincott Company, Philadelphia. Cloth \$7.00.

This, an entirely new and very comprehensive work, is sure to win a prominent place among the numerous texts on the subject of which it treats. The book is complete without bulkiness—though it has more than 700 pages, and is thorough, without the tiresomeness of hair-splitting detail which is too often indulged in to no practical good. The illustrations, so necessary to the average physician who must needs refer to a textbook on the skin, are splendidly chosen and beautifully executed; especially is this true of the colored plates. The author is to be congratulated upon the rare discrimination shown by him in his choice of subjects for extended discussion and his remarkable good judgment as to what does and what does not deserve especial emphasis. Important and well understood conditions are handled with the completeness and positiveness which their importance and the modern knowledge of their etiology, pathology, prevention and possibilities for successful treatment deserve. The less important and less well

understood conditions, while not at all neglected, receive proper attention without being overdone. The author, out of the ripeness of his experience, has formulated many original ideas which have been submitted to the fire of practical tests in his practice and in his hospital work, and which, after proof afforded by such tests, he has incorporated in this work. Generally speaking, however, his conclusions and methods are in entire accord with the most strictly modern conceptions of the best and most thoroughly scientific dermatologists.

SURGERY AND DISEASES OF THE MOUTH AND JAWS. By V. P. Blair, M. D., Major M. O. R. C., U. S. A.; Professor of Oral Surgery in the Washington University Dental School. 764 pages with 450 illustrations. C. V. Mosby Co., St. Louis. Cloth \$6.00.

This is the best book we have on the subject of Oral Surgery. It is clearly written and well illustrated and with exhaustive bibliography is a mine of information, which will especially appeal to the dentists engaged in hospital work. It should be studied by every dental student, and should be in the library of every progressive dentist. For, too often, after the dentist stops with his work on the teeth and forgets that he may at least know their relation to general pathology, surgery and medicine, this book will enable him to become wise in the larger features of his field and give him some sense of his duties and relationship as restricted specialist to the field of medicine and surgery.

TECHNIC OF THE CARREL METHOD. By J. Dumas and Anne Carrel. Translation by A. V. G. Lambert, M. D., Acting Professor of Surgery in the College of Physicians and Surgeons, New York. Paul B. Hoeber, New York. Cloth \$1.25.

This little book is simply an amplification of the details of the Carrel method of the treatment of wounds by irrigation. The work is that of Dr. J. Dumas, one of Carrel's associates, and Madame Carrel, the devoted wife and most competent assistant of Dr. Carrel in practically all of his scientific work. It is primarily intended to serve for the guidance of those to whom must be entrusted the application of the treatment, the success of which absolutely depends upon the use of the right technic. The needed apparatus is shown in the illustrations, a glossary of French and English terms, metric tables and a "handy" index all go to make the brochure complete and valuable to any who will use the Carrel method.

CONSTITUTION AND BY-LAWS OF THE TENNESSEE STATE MEDICAL ASSOCIATION.

CONSTITUTION.

ARTICLE I.

Name of the Association.

The name and the title of this organization shall be "The Tennessee State Medical Association."

ARTICLE II.

PURPOSES OF THE ASSOCIATION.

The purposes of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of Tennessee and to unite with similar associations in other States to form the American Medical Association, with a view to the extension of medical knowledge and to the advancement of medical science, to the elevation of the standard of medical education and to the enactment and enforcement of just medical laws, to the promotion of friendly intercourse among physicians and to the guarding and fostering of their material interests, and to the enlightenment and direction of public opinion in regard to the great problems of State medicine, so that the profession shall become more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life.

ARTICLE III.

COMPONENT SOCIETIES.

Component Societies shall consist of those County Medical Societies which hold charters from this Association.

ARTICLE IV.

COMPOSITION OF THE ASSOCIATION.

Section 1. This Association shall consist of Members, Delegates, and Guests.

Sec. 2. **Members.**—The Members of this Association shall be the members of the Component County Medical Societies; and commissioned officers of the Medical Departments of the U. S. Army and Navy and Marine Hospital Service, elected by a two-thirds vote at any regular meeting.

Sec. 3. **Delegates.**—Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective Component County Societies in the House of Delegates of this Association.

Sec. 4. **Guests.**—Any distinguished physician not a resident of this State may become a Guest during any Annual Session upon invitation of the Association or its Council, and shall be accorded the privilege of participating in all of the scientific work for that session.

ARTICLE V.

HOUSE OF DELEGATES.

The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Delegates elected by the Component County Societies, (2) ex-officio the officers of the

Association as defined in this Constitution, and (3) the ex-Presidents of this Association residing in Tennessee.

ARTICLE VI.

SECTIONS AND DISTRICT SOCIETIES.

The House of Delegates may provide for a division of the scientific work of the Association into appropriate sections, and for the organization of such Councilor District Societies as will promote the best interests of the profession, such societies to be composed exclusively of members of Component County Societies.

ARTICLE VII.

SESSIONS AND MEETINGS.

Section 1. The Association shall hold an Annual Session, during which there shall be held daily not less than two General Meetings, which shall be open to all registered members, delegates, and guests.

Sec. 2. The time and place for holding each Annual Session shall be fixed by the House of Delegates; provided that every alternate year the meeting shall be held in Nashville, the intervening meetings to alternate between the Eastern Division and the Western Division of the State.

ARTICLE VIII.

OFFICERS.

Section 1. The officers of this Association shall be a President, three Vice Presidents, a Secretary, a Treasurer, three Trustees of the Journal, and ten Councilors, one of whom shall be from each Congressional District of the State.

Sec. 2. All the officers shall be elected annually except the Trustees of the Journal and the Councilors. Three Trustees of the Journal shall be elected at the annual session of 1909, no two of whom shall be from the same grand division of the State. One Trustee shall be elected to serve for one year, one to serve for two years, and one to serve for three years. At each annual session thereafter one Trustee shall be elected to serve for three years.

The term of office of the Councilors shall be two years, except that five of the ten herein provided for shall be elected at the annual session of 1909 to serve for one year only. At each annual session thereafter five Councilors shall be elected to serve for two years.

The President and Secretary shall be members of the Council, ex officio, and any five Councilors shall constitute a quorum.

Sec. 3. All the officers of this Association, except the Treasurer, shall be elected by the House of Delegates on the morning of the last day of the annual session, but no delegate shall be eligible to offices except those of Trustees of the Journal and Councilor, and no person shall be elected to any office who is not in attendance at the annual session. No one shall be eligible for President of this Association who has not been a member in good standing for the five years next preceding the election, nor for Vice President who has not been a member

in good standing for the three years next preceding.

ARTICLE IX.

BOARD OF TRUSTEES.

Section 1. The Board of Trustees of the Journal, composed of three members of this Association, elected as heretofore, shall select its own chairman, who shall be ex officio Treasurer of this Association. The Trustees shall have entire control of the publication, the policy, and the editorial and financial management of the Journal of the Association. It shall be authorized and empowered to make all contracts necessary for the conduct of the Journal.

The Chairman of this Board, who is also ex officio Treasurer of this Association, shall be the custodian of all the funds derived from the Journal.

The Board of Trustees shall hold semi-annual meetings and such other meetings as the business of the Journal may require, subject to the call of the Chairman. The Board of Trustees shall make all expenditures of the funds of the Association, and render at the annual meeting a full and detailed account of all receipts and disbursements. In the event of death or vacancy of any member of the Board of Trustees between the annual sessions of the Association, the Vice President for that division of the State in which the vacancy occurs shall fill the position until the next annual meeting.

Sec. 2. The Board of Trustees shall serve without compensation, except the Chairman, who is ex officio the Treasurer, whose compensation shall be fixed by the House of Delegates; however, their actual expenses in attending the meetings of the Board shall be paid out of the funds of the Association.

ARTICLE X.

FUNDS AND EXPENSES.

Funds for meeting the expenses of the Association shall be arranged for by the House of Delegates by an equal per capita assessment upon each County Society, to be fixed by the House of Delegates, by voluntary contribution, and from the profits of its publications. Funds may be appropriated by the House of Delegates to defray the expenses of the Annual Sessions, for publication, and for such other purposes as will promote the welfare of the Association and profession.

ARTICLE XI.

REFERENDUM.

The General Meeting of the Association may, by a two-thirds vote, order a general referendum upon any question pending before the House of Delegates; and the House of Delegates may, by a similar vote of its own members, or after a like vote of the General Meeting, submit any such question to the membership of the Association for a final vote; and if the persons voting shall comprise a majority

of all the members, a majority of such vote shall determine the question and be binding upon the House of Delegates.

ARTICLE XII.

THE SEAL.

The Association shall have a common Seal, with power to break, change, or renew the same at pleasure.

ARTICLE XIII.

AMENDMENTS.

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the delegates registered at that Annual Session; provided that such amendment shall have been presented in open meeting at the previous Annual Session, and that it shall have been sent officially to each Component County Society at least two months before the session at which final action is to be taken.

BY-LAWS

CHAPTER I.

MEMBERSHIP.

Section 1. All members of the Component County Societies shall be privileged to attend all meetings and take part in all of the proceedings of the Annual Sessions, and shall be eligible to any office within the gift of the Association.

Sec. 2. The name of a physician upon a properly certified roster of members, or list of delegates, of a chartered County Society which has paid its annual assessment, shall be prima facie evidence of his right to register at the Annual Session in the respective bodies of this Association.

Sec. 3. No person who is under sentence of suspension or expulsion from any Component Society of this Association or whose name has been dropped from its roll of members shall be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take any part in any of its proceedings until such time as he has been relieved of such disability.

Sec. 4. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the Component Society of which he is a member. When his right to membership has been verified by reference to the roster of his Society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that session. No member or delegate shall take part in any of the proceedings of an Annual Session until he has complied with the provisions of this section.

CHAPTER II.

ANNUAL AND SPECIAL SESSIONS OF THE ASSOCIATION.

Section 1. The Association shall hold an Annual Session on the second Tuesday in April, and at such place as has been fixed at the preceding Annual Session.

Sec. 2. Special sessions of either the Association or House of Delegates shall be called by the

President at his discretion or upon petition of twenty delegates.

CHAPTER III.

GENERAL MEETINGS.

Section 1. The General Meetings shall include all registered members, delegates, and guests, who shall have equal rights to participate in the proceedings and discussions, and, except guests, to vote on pending questions. Each General Meeting shall be presided over by the President, or, in his absence or disability or by his request, by one of the Vice Presidents. Before it, at such time and place as may have been arranged, shall be delivered the annual address of the President and the annual orations; and the entire time of the session, so far as may be, shall be devoted to papers and discussions relating to scientific medicine.

Sec. 2. The General meeting shall have authority to create committees or commissions for scientific investigations of special interest and importance to the profession and public, and to receive and dispose of reports of the same, but any expense in connection therewith must first be concurred in by the House of Delegates.

Sec. 3. Except by special vote, the order of exercises, papers, and discussions as set forth in the official programme shall be followed from day to day until it has been completed, and all papers omitted will be recalled in regular order.

Sec. 4. No address or paper before the Association, except the addresses of the President and orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once on any subject, provided each essayist be allowed five minutes in which to close the discussion.

Sec. 5. All papers read before the Society shall be its property. Each paper shall be deposited with the Secretary when read; and if this is not done, it shall not be published; but each essayist may furnish a copy to one or more medical journals for publication, after the paper has been read before the Association.

CHAPTER IV.

HOUSE OF DELEGATES.

Section 1. The House of Delegates shall meet annually at the time and place of the Annual Session of the Association, and in order not to conflict with the General Meeting of the Association, or with the meeting held for the address of the President and the annual orations, it shall meet at 8 to 9 a. m. and 2 to 3 p. m. each day, until the work is finished, so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as is consistent with their duties; but if the business interests of the Association and profession require, it may meet in advance or remain in session after the final adjournment of the General Meeting.

Sec. 2. Each Component County Society shall be entitled to send to the House of Delegates each

year one delegate for every fifty members, and one for every fraction thereof; but each County Society holding a charter from this Association, which has made its annual report and paid its assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate.

Sec. 3. A majority of the registered delegates shall constitute a quorum, and all of the meetings of the House of Delegates shall be open to members of the Association.

Sec. 4. It shall, through its officers, Council, and otherwise, give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each Annual Session a stepping-stone to future ones of higher interest.

Sec. 5. It shall consider and advise as to the material interests of the profession and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public health legislation and to diffuse popular information in relation thereto.

Sec. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such County Societies as already exist and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse between physicians of the same locality, and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under medical society influence.

Sec. 7. It shall encourage post-graduate work in medical centers, as well as home study and research, and shall endeavor to have the results of the same utilized and intelligently discussed in the County Societies.

Sec. 8. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body in such a manner that not more than one-half of the delegates shall be elected in any one year.

Sec. 9. It shall, upon application, provide and issue charters to County Societies organized to conform to the spirit of this Constitution and By-Laws.

Sec. 10. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into Societies, to be designated by hyphenating the names of two or more counties so as to distinguish them from district and other classes of Societies; and these Societies, when organized and chartered, shall be entitled to all the privileges and representation provided herein for County Societies until such counties may be organized separately.

Sec. 11. The Societies now existing, known as

East Tennessee, West Tennessee, and Middle Tennessee Associations, may, by a two-thirds vote of their members at a regular meeting, if they so desire, become component members of the State Association, provided that their members are members of the affiliated County Medical Societies; and the District Societies may, if they desire, by two-thirds vote of their members, become component members of the State Society, provided they hold their meetings in the fall of the year; and provided, further, that the Presidents of these Associations shall be the three Vice Presidents of the Tennessee State Medical Association.

Sec. 12. It shall have authority to appoint committees for special purposes from its own membership, or from among members of the Association who are not members of the House of Delegates; and such committees may report to the House of Delegates in person, and may participate in the debate thereon.

CHAPTER V.

ELECTION OF OFFICERS.

Section 1. All elections shall be by secret ballot, and the majority of the votes cast shall be necessary to elect.

Sec. 2. On the first day of the Annual Session the delegates from each of the three grand divisions shall select three delegates from their respective divisions, to serve as a Committee on Nominations, no two of whom shall be from the same county. It shall be the duty of this committee to consult with the members of the Association and to hold one or more meetings, at which the best interests of the Association and of the profession of the State for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the names of three members for the office of President and of one member for each of the other offices to be filled at that Annual Session.

Sec. 3. The report of the Nominating Committee and the election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the General Session.

Sec. 4. Nothing in this article shall be construed to prevent additional nominations being made by members of the House of Delegates.

Sec. 5. In balloting for the nominees for President, if on the first ballot no one receives a majority of the votes cast, the name receiving the smallest number of votes shall be dropped, and the balloting shall proceed in this manner until an election is had.

CHAPTER VI.

DUTIES OF OFFICERS.

Section 1. The President shall preside at all meetings of the Association and of the House of Delegates, shall appoint all committees not otherwise provided for, shall deliver an annual address

at such time as may be arranged, shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and, as far as practicable, shall visit by appointment the various sections of the State and assist the Councilors in building up the County Societies and in making their work more practical and useful.

Sec. 2. The Vice President shall assist the President in the discharge of his duties. In the event of his death, resignation, or removal, the Vice President to succeed him shall be from the same Grand Division of the State.

Sec. 3. The Treasurer shall give bond for the trust reposed in him whenever the House of Delegates shall deem it requisite. He shall demand and receive all funds due the Association, together with the bequests and donations. He shall pay money out of the treasury only as provided for in Chapter IX, as defined and set forth in the duties of the Board of Trustees; he shall subject his accounts to such examination as the House of Delegates may order; he shall annually render an account of his doings and of the state of the funds in his hands; he shall charge upon his books the assessments against each Component County Society at the end of the fiscal year; he shall collect and make proper credits for the same and perform such other duties as may be assigned to him. The compensation of the Treasurer shall be \$100 per annum as an honorarium.

Sec. 4. The Secretary, acting with the Committee on Scientific Work, shall prepare and issue the programmes for and attend all meetings of the Association and of the House of Delegates, and he shall keep minutes of their respective proceedings in separate record books. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer all funds of the Association which come into his hands; he shall provide for the registration of the members and delegates at the Annual Sessions; he shall keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his County Society, and upon request, shall transmit a copy of this list to the American Medical Association for publication. In so far as it is in his power, he shall use the printed matter, correspondence, and influence of his office to aid the Councilors in the organization and improvement of the County Societies, and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall act as Chairman of the Committee on Scientific Work. He shall be the editor of the Journal of the Association, and shall discharge such duties as the Trus-

tees may direct. He shall receive for his services the sum of one thousand dollars (1,000) annually out of the funds of the Association.

CHAPTER VII.

COUNCIL.

Section 1. The Council shall hold daily meetings during the Annual Session of the Association, and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the last day of the Annual Session of the Association for reorganization and for the outlining of work for the ensuing year. At this meeting it shall elect a Chairman and a Secretary, and it shall keep a permanent record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates at such time as may be provided.

Sec. 2. Each Councilor shall be organizer, peacemaker, and censor for his district. He shall visit each county in his district at least once a year for the purpose of organizing Component Societies where none exist, for inquiring into the condition of the profession, and for improving and increasing the zeal of the County Societies and their members; he shall make an annual report of his doings and of the condition of the profession of each county in his district to each Annual Session of the House of Delegates. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the House of Delegates upon a properly itemized statement, but this shall not be construed to include his expense in attending the Annual Session of the Association.

Sec. 3. Collectively the Council shall be the Board of Censors of the Association. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the Component Societies, or to this Association. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a County Society upon which an appeal is taken from the decision of an individual Councilor. Its decision in all such cases shall be final.

CHAPTER VIII.

COMMITTEES.

Section 1. The Standing Committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Nominations.

A Committee on Arrangements.

Such other committees as may be necessary.

Such committees shall be appointed by the President unless otherwise provided.

Sec. 2. The Committee on Scientific Work shall consist of three members, of which the Secretary shall be a member, and Chairman, and shall determine the character and scope of the scientific pro-

ceedings of the Association for each session, subject to the instructions of the House of Delegates or of the Association or to the provisions of the Constitution and By-Laws. Thirty days previous to each Annual Session it shall prepare and issue a programme announcing the order in which papers, discussions, and other business shall be presented, which shall be adhered to by the Association as nearly as practicable.

Sec. 3. The Committee on Public Policy and Legislation shall consist of three members—one from each Grand Division of the State—and the President and Secretary. Under the direction of the House of Delegates it shall represent the Association in securing and enforcing legislation in the interest of the public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence of the profession to promote the general influence in local, State, and national affairs and elections. Its work shall be done with the dignity becoming a great profession and with that wisdom which shall make effective its power and influence. It shall have authority to be heard before the entire Association upon questions of great concern at such time as may be arranged during the Annual Session.

Sec. 4. The Committee on Nominations shall be appointed and performs its duties in accordance with the provisions of Chapter V, Sections 2, 3, and 4, of these By-Laws.

Sec. 5. The Committee on Arrangements shall consist of the Component Society in the territory in which the Annual Session is to be held. It shall, by committees of its own selection, provide suitable accommodations for the meeting places of the Association and of the House of Delegates, and of their respective committees, and shall have general charge of all the arrangements. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the programme, and shall make additional announcements during the session as occasion may require.

CHAPTER IX.

ASSESSMENTS AND EXPENDITURES.

Section 1. An assessment of \$2.00 per capita on the active membership of the Component Societies is hereby made the annual dues and subscription to the Journal of this Association; provided the Component Society does not include in its Honorary Membership any physician residing within the State, and who is not a member of another County Society, and provided it only includes in its veteran list physicians who are seventy years of age or older, and who have been members of an official society five preceding years.

Sec. 2. The Secretary of each County Society shall forward a roster of all officers, a list of delegates and members, and a list of non-affiliated physicians of the county, also a list of members who

have died during the year, to the Secretary of this Association thirty days in advance of the Annual Session.

Sec. 3. The Treasurer of each County Society shall collect and forward to the Treasurer of this Association the assessment of \$2.00 per capita for each active member not later than fifteen days before the opening of each Annual Session.

CHAPTER X.

RULES OF CONDUCT.

The principles set forth in the Code of Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

CHAPTER XI.

RULES OF ORDER.

The deliberations of this Association shall be governed by parliamentary usage as contained in Robert's "Rules of Order," unless otherwise determined by a vote of its respective bodies.

CHAPTER XII.

COUNTY SOCIETIES.

Section 1. All County Societies now in affiliation with the State Association, or those that may hereafter be organized in this State which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, upon application to the House of Delegates, receive a charter from, and become a component part of, this Association.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no Component Society exists, and charters shall be issued thereto.

Sec. 3. Charters shall be issued only upon approval of the House of Delegates, and shall be signed by the President and Secretary of this Association. The House of Delegates shall have authority to revoke the charter of any Component County Society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Each County Society shall judge of the qualification of its own members; but as such societies are the only portals to this Association and to the American Medical Association, every reputable and legally registered physician who is practicing or who will agree to practice non-sectarian medicine shall be entitled to membership. Before a charter is issued to any County Society full and ample notice and opportunity shall be given to every such physician in the county to become a member.

Sec. 5. Only one Component Medical Society shall be chartered in any county. Where more than one County Society exists, friendly overtures and concessions shall be made, with the aid of the Councilor for the district, if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

Sec. 6. Any physician who may feel aggrieved by the action of the Society in his county in refusing him membership or in suspending or expelling him, shall have the right of appeal to the Council.

Sec. 7. In hearing appeals the Council may admit oral or written evidence, as in its judgment will best and most fairly present the facts; but in case of every appeal, both as a board and as an individual Councilors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 8. When a member in good standing in a Component Society moves to another county in this State, his name, upon request, shall be transferred, without cost, to the roster of the County Society into whose jurisdiction he moves.

Sec. 9. A physician living on or near a county line may hold his membership in that county most convenient for him to attend, on permission of the Society in whose jurisdiction he resides.

Sec. 10. Each County Society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral, and material condition of every physician in the county; and systematic effort shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every qualified physician in the county.

Sec. 11. Frequent meetings shall be encouraged and the most attractive programmes arranged that are possible. The younger members shall be especially encouraged to do post-graduate and original research work and to give the Society the first benefit of such labors. Official position and other preferences may be unstintingly given to such members.

Sec. 12. At some meeting in advance of the Annual Session of this Association each County Society shall elect a delegate or delegates to represent it in the House of Delegates of this Association, in the proportion of one delegate to each fifty members, or fraction thereof; and the Secretary of the Society shall send a list of such delegates to the Secretary of this Association at least ten days before the Annual Sessions.

Sec. 13. The Secretary of each County Society shall keep a roster of its members and a list of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. He shall furnish an official report containing such information, upon blanks supplied him for the purpose to the Secretary of this Association, thirty days in advance of each Annual Session. In keeping such a roster the Secretary shall note any changes in the personnel of the profession by death or by removal to or from the county, and in making his annual report he shall be certain to account for

every physician who has lived in the county during the year.

CHAPTER XIII.

AMENDMENTS.

These By-Laws may be amended at any Annual Session by a majority vote of all the delegates present at that session, after the amendment has been made in writing, and has been laid upon the table for one day.

PRINCIPLES OF MEDICAL ETHICS.

The American Medical Association in lieu of the Code of Ethics adopted the following:

CHAPTER I.

DUTIES OF PHYSICIANS TO THEIR PATIENTS.

Section 1. Physicians should not only be ever ready to obey the calls of the sick and the injured, but should be mindful of the high character of their mission and of the responsibilities they must incur in the discharge of momentous duties. In their ministrations they should never forget that the comfort, the health, and the lives of those entrusted to their care depend on skill, attention, and fidelity. In deportment they should unite tenderness, cheerfulness, and firmness, and thus inspire all sufferers with gratitude, respect, and confidence. These observances are the more sacred because, generally, the only tribunal to adjudge penalties for unkindness, carelessness, or neglect is their own conscience.

Section 2. Every patient committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprices of the sick. Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted, in their professional visits, should be guarded with the most scrupulous fidelity and honor.

Sec. 3. The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, nor infirmity of disposition or flaw of character observed during medical attendance, should ever be divulged by physicians, except when imperatively required by the laws of the State. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

Sec. 4. Frequent visits to the sick are often requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, and to meet promptly every change which may occur. Unnecessary visits are to be avoided, as they give undue anxiety to the patient; but to secure the patient against irritating suspense and disappointment, the regular and periodical visits of the physician should be made as nearly as possible at the hour when they may be reasonably expected by the patient.

Sec. 5. Ordinarily the physician should not be forward to make gloomy prognostications, but

should not fail, on proper occasions, to give timely notice of dangerous manifestations to the friends of the patient, and even to the patient, if absolutely necessary. This notice, however, is at times so peculiarly alarming when given by the physician that its deliverance may often be preferably assigned to another person of good judgment.

Sec. 6. The physician should be a minister of hope and comfort to the sick, since life may be lengthened or shortened not only by the acts but by the words or manner of the physician, whose solemn duty it is to avoid all utterances and actions having a tendency to discourage and depress the patient.

Sec. 7. The medical attendant ought not to abandon a patient because deemed incurable, for continued attention may be highly useful to the sufferer and comforting to the relatives even in the last period of the fatal malady, by alleviating pain and by soothing mental anguish.

Sec. 8. The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequences of evil conduct, ought never to be neglected. Good counsels, or even remonstrances, will give satisfaction, not offense, if they be tactfully proffered and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

CHAPTER II.

DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE.

ARTICLE I.

DUTIES OF THE SUPPORT OF PROFESSIONAL CHARACTER.

Section 1. Every one, on entering the profession, and thereby becoming entitled to full professional fellowship, incurs an obligation to uphold its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. It is inconsistent with the principles of medical science and it is incompatible with honorable standing in the profession for physicians to designate their practice as based on an exclusive dogma or a sectarian system of medicine.

Sec. 2. The physician should observe strictly such laws as are instituted for the government of the members of the profession; should honor the fraternity as a body; should endeavor to promote the science and art of medicine, and should entertain a due respect for those seniors who by their labors have contributed to its advancement.

Sec. 3. Every physician should identify himself with the organized body of his profession as represented in the community in which he resides. The organization of local or county medical societies, where they do not exist, should be effected so

far as practicable. Such county societies, constituting, as they do, the chief element of strength in the organization of the profession, should have the active support of their members and should be made instruments for the cultivation of fellowship, for the exchange of professional experience, for the advancement of medical knowledge, for the maintenance of ethical standards, and for the promotion in general of the interests of the profession and the welfare of the public.

Sec. 4. All County Medical Societies thus organized ought to place themselves in affiliation with their respective State Associations, and these, in turn, with the American Medical Association.

Sec. 5. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients. It is due to the patients, as with out it their respect and confidence cannot be commanded, and to the profession, because no scientific attainments can compensate for the want of correct moral principles.

Sec. 6. It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding; and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye, and an unclouded mind are essential to the welfare and even to the life of a human being.

Sec. 7. It is incompatible with honorable standing in the profession to resort to public advertisements or private cards inviting the attention of persons affected with particular diseases; to promise radical cures; to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success, or to employ any of the other methods of charlatans.

Sec. 8. It is equally derogatory to professional character for physicians to hold patents for any surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances; to assist unqualified persons to evade the legal restrictions governing the practice of medicine; or to dispense or promote the use of secret medicines, for if such nostrums are of real efficacy any concealment regarding them is inconsistent with beneficence and professional liberality, and if mystery alone gave them public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically.

(To Be Continued.)

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FRACTURES OF THE NECK OF THE FEMUR.*

By WILLIS C. CAMPBELL, M. D.,
Memphis.

The management of complete fracture of the neck of femur has given such poor results in those past the meridian of life, that even laymen realize by experience that a broken hip usually means a permanent cripple, and until comparatively recently this prognosis has been unfavorable by the profession. In 1834 Sir Astley Cooper stated "I believe that these fractures unite by ligament and not by bone." Scudder observes that only two out of sixteen were of functional use, while Sir Wm. H. Bennet, as late as 1902, remarked that "bony union does not occur."

That non-union is the rule rather than the exception is quite evident from the number who appeal for aid on account of disability and pain. Often the diagnosis is a surprise to the patient months or years after the injury, and often bony atrophy has made complete restoration of function impossible. These ununited fractures give a varied history. In some the diagnosis has been made and Buck's extension used on a sagging bed. In others, the injury being slight the patient was treated for sprain, that persisted without improvement, when X-ray was made several weeks later. In quite a few the patient continued to walk or was treated by exercises, massage and osteopathy until suddenly the affected member lost all functional use, which really means a strong impaction has been broken—a most deplorable and inexcusable occurrence,

*Read at annual meeting of Tennessee State Medical Association at Nashville, April, 1917.

for impacted fractures may heal without mechanical support other than rest in bed.

The causes of non-union in this location are many:—

1. Faulty mechanics—Buck's extension—wooden splints and plaster of Paris as commonly used do not meet one single mechanical requirement.

2. Failure in diagnosis until primary union cannot be expected.

3. Depletion of the blood supply to the head, leaving only small vessel through ligamentum teres.

4. Syphilis may prevent union here, as in other bones. With Wassermann tests in all cases non-union from this cause may be averted.

5. Too early weight bearing. Body weight is received on a horizontal or oblique axis, which makes the neck of the femur the most vulnerable point in the skeletal system.

6. It is usually difficult to align the "short joint fragment" when any joint is involved.

7. Synovial fluid, if the joint proper is invaded, has a tendency to prevent callous formation.

8. Psoas muscle may be caught between fragments, preventing reduction and bony union.

We must first consider the mechanics of the parts involved to successfully reduce any fracture. When a complete break occurs in the neck of femur the distal fragment is drawn upward by the strong gluteal muscles through their attachment to the trochanter major, though contraction of any long muscles of the thigh assist in upward displacement of the trochanter. At the same time, the external rotators, gluteus maximus and medius, obturators, quadratus, etc., being more powerful than the internal rotators, turn the limb and distal fragment outward. Gravity also induces this posi-

tion. With these forces operating the distal fragment lies above the level of the proximal and is at the same time rotated outward, so that the raw surface faces more or less forward. There is no muscular attachment to the proximal fragment, rotation of which may occur either upward or downward, but the raw surface is directed outward. To reiterate, the distal fragment is above the head and the proximal and faces anteriorly, while the proximal fragment faces outward. Consequently, simple traction would not approximate, but only relieve muscular spasm and shortening, though allowing displacement when traction forces are removed.

The method of reduction and retention depends on the exact position of fracture. If near the head it is called "capital"; in the mid-region of the neck, "central"; and at the base or through the trochanter, "lateral." If capital or central, the Whitman method is preferred. The hip through the thigh is abducted to the limit, which is about 45 degrees. This relaxes the gluteal muscles and causes the distal fragment to descend and approach the proximal. At the same time the limb is rotated inward so that the raw surface of the distal fragment is interlocked with the bony surface of the proximal. The inferior fibers of the capsule of the hip joint are thus made tense, rotating the head in the proper alignment and holding the fragments together. In this position a plaster cast is applied from the nipple line to the toes of the affected side. A special table or apparatus holds the patient in the proper position until the cast is applied and is almost essential to success. In the lateral type (in the region of the greater trochanter), the capsule is not a factor in holding the fragments and extreme abduction may cause the bones to overlap or cross, for which reason only moderate abduction is used. Internal rotation is also obviously essential and, at the same time, traction on a Hawley table or other apparatus for this purpose. Simple traction by hand is inconstant and inefficient.

In debilitated cases, or those where uraemia or pneumonia is impending, a cast is applied with the hip and knee flexed 90 degrees, extreme abduction and internal rotation of the hip, and the patient placed in a chair. I first used this position two years ago in the wife of a physician, who was in uraemic stupor. The

result was perfect restoration of function. As far as I can ascertain, this position was not used prior to this time, though the sitting posture is by no means new.

Frequent change of position is enforced by constant attendants and the urinary output is daily examined. The cast remains at least eight weeks, followed by one month in bed or rolling chair with active and passive exercises. Walking on crutches may be allowed from one to two months after removal of cast, but no weight should be borne from four to six months after occurrence of fracture.

Ether anesthesia may be used in healthy individuals, but should contra-indication exist, small doses of hyoscin-morphine is quite sufficient to obtain muscular relaxation.

Maxwell, of Philadelphia, used abduction over 30 years ago, but Whitman has impressed the profession with the value of the method and has given to us a concrete knowledge of the subject. My results have been uniformly good in all fresh fractures when the after treatment was properly carried out in ages from 30 to 88, and in many instances in very old patients there has not been the slightest impairment of function apparent. It has been observed that the nearer the head a fracture occurs, the less the chance of bony union, but I have not found this to be true in my cases; in fact, I feel as much assurance as in fractures elsewhere in the skeletal system. Age is no contra-indication to treatment. The risk is slight if carefully and properly managed, otherwise the individual is a hopeless cripple and often suffers constant pain.

In old ununited fractures a bone graft is removed from the tibia and placed through the trochanter, neck and head to within one-fourth of an inch of the articular surface. In hopeless cases the head of the femur may be removed for pain, with much relief. I do not use nails or other hardware as I have found the autogenous graft safer with practically no sequellae.

Impaction should not be disturbed in the aged. A simple plaster spica or other splint is applied without disturbing the position of the limb.

I am convinced that the Whitman procedure is far superior to other methods, though occasional good results may occur from any. I have seen one instance of firm union by the Hodgen's splint, one with simple Buck's extension, and

one in which no treatment was given at all other than rest in bed.

The failure in obtaining union in fractures of this region is frequently due to neglect on our part. Early diagnosis and early treatment by the Whitman technique will undoubtedly prevent a large number of hopeless cripples.

DISCUSSION.

DR. W. M. McCABE, Nashville: Everybody here probably knows by this time that I am a great advocate of the Hodgen splint. We have practically discarded all other appliances except the Hodgen apparatus. Its simplicity not only appeals to one, but it deters those who do not know about it from using it. It is a splint we have used in every type of fracture of the hip or fracture of the femur, fracture of the neck of the femur, fracture of the shaft near the knee, with absolutely uniform results. We would not go back to the use of plaster of Paris for anything. We find patients going along who have been treated with plaster of Paris suffering pain, and by putting them up in a Hodgen's splint they are made very comfortable. I would not use plaster of Paris under any circumstances.

DR. TUCKER, Nashville: I am in a rather peculiar position in this matter. My first year I served in the hospital under Dr. McCabe and was imbued with the idea of the Hodgen splint. My second year was spent in a hospital under Dr. Whitman, and I am very glad that Dr. Campbell brought out his treatment. To my mind the anatomical is the ideal treatment, although I must say that the Hodgen splint does give us a very good functional result and has some advantages over the Whitman method. An anesthetic is not necessary for the first reduction, whereas in the use of the Whitman abduction method an anesthetic is frequently necessary to overcome the muscular contraction. However, on the whole, I agree with Dr. Campbell strongly that the Whitman treatment in abduction in plaster is the proper treatment for this condition.

Dr. McCabe says that they have treated many cases after the plaster has been used. We know that there are different ways of using plaster of Paris, and it is not the plaster of Paris that cures, but putting the fracture in proper position and maintaining it there by the plaster of Paris.

DR. DUNCAN EVE, JR., Nashville, Tenn.: I fully agree with Dr. McCabe in regard to the Hodgen splint. We have had a great many cases of fractures of the hip. In the first place the majority of these fractures occur in old people; therefore, it will be necessary to give the patient a general anesthetic for reduction. This is not so in treating fractures of the hip with a Hodgen splint.

Another point that we think is against Whitman's method, that you are bound to have a cer-

tain degree of atrophy or wasting of the muscles when a plaster Paris is applied and allowed to remain for six or eight weeks. Furthermore, by the Whitman's method you are apt to have more or less stiffening of the knee-joint, which will require several weeks to overcome. This is not so in treating the fractures with the Hodgen splint.

DR. J. F. GALLAGHER, Nashville: About six years ago, in conjunction with Dr. McCabe, I read a paper before this Association advocating the use of the Hodgen splint in the treatment of fractures of the femur and fractures of the neck of the femur. I am very happy to say this splint has become very popular in Nashville and the surrounding country, and I do not think it would have become so popular if it were not pretty universally applicable and on account of the excellent results that are obtained in the hands of the average practitioner.

We should first consider the class of patients in whom we find fracture of the hip. As you well know, it is usually the elderly female who has such a fracture and the first requisite is to save the patient's life. You have seen cases with a little drop, helpless eversion, pain, and so on, and the patient goes on and dies. Such patients will die with any sort of apparatus.

Recently I had a case in an elderly woman of 80 who died, and we will all have such cases. The first thing is to save the patient's life. Now, you can take an old individual, and if you put her to bed with a fracture of the hip, after a time she may die. When we use the Hodgen splint, this suspension splint, she is able to sit up immediately. The next point is, there is nothing around the limb to prevent us from using massage and keeping the muscle in tone. The leg is bent at an angle at the knee, and we do not have that stiffening which follows the application of plaster of Paris, no matter how judiciously it may be used.

These patients do not die, and we find half of them at least have good functional results. I do not know the exact statistics offhand, but I think I can safely say half of them have good functional results.

The operative type of case is very rare; this fracture does not occur in a good operative risk, and we very rarely see a case that we think is a good operative risk, even if we do not get a good result from the use of the Hodgen splint. I think I may say in passing that I do not approve of the Whitman apparatus or Whitman method, because the patient is necessarily kept recumbent in bed. I would condemn in the severest terms the use of a Buck's extension in this condition.

I noticed that the methods adopted in the recent war surgery that various kinds of suspension methods have been used, and it seems insofar as the femur is concerned they are unnecessarily complicated.

DR. E. M. HOLDER, Memphis: What is the reason you cannot use practically the Royal Whit-

man position with the Hodgen splint? I think you can.

I have seen Dr. Campbell's work and can commend it heartily. I have watched the results, yet I am rather particular to the use of the Hodgen splint because it is very irksome for old people to be confined in bed. It is very troublesome to have to slip a bed pan under the patient with the old splint, but with a Hodgen splint you can pull up with the arm support and have a bed pan put under the patient without any inconvenience. You can roll the patient to the X-ray room and see whether or not the position of the bone is satisfactory. You can do this daily if you want to. You can do that with the Royal Whitman method, but you do not with the rigid plaster splint because the limb is put in a permanent position and you cannot abduct the leg as you can with a Hodgen splint to get the approximation that you want. Now, you have heard both sides.

These aged individuals do not stand confinement very well. Even middle-aged men and women, if put to bed with a fracture, will probably die. You would not tie to any one type of treatment. If you have a vigorous young individual with a fracture, any convenient splint that holds the bone or bones in good position, after approximation, is all right, but I believe in this type of patients where they are advanced in years, the Hodgen splint gives more freedom, takes away the danger to life from confinement, and the results are so very satisfactory. The Hodgen splint has been adopted in most of the medical centers over the country.

DR. H. M. TIGERT, Nashville: Mr. Chairman and Gentlemen: Dr. Holder's position reminds me of a thing my good friend, Dr. Hardison of Lewisburg, said to me on one occasion after I had taken a middle-of-the-road position in a medical discussion: "Here is a man who teaches both the round system and the flat system." Here is Dr. Holder perched on top of a ten-rail fence with one leg in a Hodgen's splint and the other in plaster of Paris applied after the Whitman method. I want to say one word in regard to the Hodgen's splint, and that is, that any man who has used this splint intelligently, in properly selected cases of fractures of the femur, will not advocate any other method of treatment. It can be applied by any practitioner if he has seen it used once and, what is more important, satisfactory results will be obtained. If I had a broken hip I would infinitely rather trust it to a Hodgen's splint with an average doctor in attendance than to allow the most brilliant surgeon in Tennessee to perpetrate any other line of treatment upon it. This is how strongly I believe in it. This splint makes the patient comfortable from the very beginning of its application. He is not confined to the recumbent position, which is a potent factor in the high death rate of fractures of the hip in patients treated with plaster. No anesthetic is required for its application.

In my early professional career I had some experience with the plaster of Paris splints in the treatment of fractures of the upper end of the femur, but I am glad that the experience is now only a memory.

It is indeed a great surprise to me that any one could be found who would read a paper on these injuries without advocating Hodgen's splint. So far I have never had a failure or a bad result in any case where a Hodgen's splint was used. In one case—that of an old man past sixty-five years of age with organic heart disease and decompensation, who sustained a fracture of his right hip and was treated with this splint—the patient not only improved so far as his heart was concerned, but was able to walk in six or seven weeks after the injury. He died of organic heart disease one year later.

DR. CAMPBELL (closing): I wish to thank the members for their liberal discussion. I knew very well that in coming to Nashville to read a paper on this subject I was coming to the hotbed of the Hodgen splint.

Several points have been brought out in connection with this subject. As Dr. Tucker has stated, he has seen the work here and under Whitman, and he prefers the latter method. He mentioned the fact of the use of an anesthetic. All do not require a general anesthetic. This can be done with a small dose of morphin and hyoscin anesthesia, say, the one-eighth of a grain, in old and debilitated cases.

I would like to say that I do not use the Whitman position in all cases. I do use plaster of Paris, paying attention to abduction and internal rotation, and have gotten excellent results in the debilitated type of cases. It is true, we do have some trouble with stiffness of the knee, but I have seen this same trouble with the use of the Hodgen splint. I have used the Hodgen splint, but not in this type of fracture, for it must be considered mechanical principles in the treatment of fracture at all times. Of course, there is a difference of opinion, as you have seen in this discussion, but Hodgen's splint is not used in the medical centers to the extent that you have been led to believe. Ochsner uses the Whitman method and many other men throughout the country. I know that to be a fact, and it can be easily proven by consulting the surgical literature. The Whitman method is also used by Ridlon of Chicago, and it is used by other men in New York City besides Whitman, himself and his colleagues. It is not an antiquated method. Dr. Gallagher says that he gets excellent results in 50 per cent of his cases. It has been my observation that you get results by the Whitman method in a larger percentage of cases, say 75 to 80 per cent. I have not had a single case of fresh fracture of the neck of the femur that was properly managed throughout that did not get a good result. I have had one death. In this case I allowed the patient to return to her

home, where she remained flat on her back and did not receive proper after-treatment. She died. With that exception, I have had no deaths and have had excellent results—"the proof of the pudding is in the eating thereof."

This treatment is not applicable to war surgery on account of the number of cases where we have considerable sloughs, when we must use such methods as the Hodgen splint, or something similar to it. As far as I have observed, I do not think the Hodgen splint is absolutely "fool-proof," or can be used successfully by every one. I have seen poor results with the Hodgen splint because it was not used intelligently. The Hodgen splint requires individual attention. If you use that splint and obtain the proper angle of abduction that you do in the Whitman position, it will require the constant care of a nurse.

A FEW REMARKS ON BREAST TUMORS.*

By E. H. ADKINS, M. D.,
Chattanooga.

The object of this paper is not to bring before you anything new on the subject which I have chosen, but it is an attempt to bring before the Society in a practical way some of the signs and symptoms of breast tumors, and also the necessity for prompt action on the part of the physician in eradicating them.

I must of necessity cover ground that is well known to every one present, nevertheless, the cancer problem is with us still and no solution as yet has been found.

Deaver, in a recent contribution on the subject of mammary carcinoma, reports that in a large series of cases the duration of the disease, before operation, averages thirty months. That should produce a profound impression and lead to a realization of the fact that we, as a profession, are not applying much of our knowledge on the subject in a scientific way. Therefore, I think the subject is always timely, and should be given a place on the program of nearly every medical and surgical conference.

Carcinoma propaganda sent out by the profession has produced results, according to the larger clinics, in that women are coming to us earlier with their mammary lumps. Therefore, it behooves us to increase our interest in this sub-

ject so that we can improve further in the early recognition of this disease, and decrease the awful toll of life which it is taking.

The word tumor has been used customarily to group together a varied assembly of morbid conditions and signifies a swelling. Clinically it is not likely to disappear, although it has lost its importance to the pathologist. The microscope has stripped the term of its former wide significance, yet we use it more often than any other, which implies, therefore, a lack of ability to make an accurate pathological diagnosis from clinical signs and symptoms of mammary neoplasms. That is really our plight in a large number of our cases, consequently as long as such a state of things exists, should we ever adopt a watchful waiting policy toward tumors of the breast? On the other hand, should we consider every tumor of the breast malignant and do a radical operation? The purpose of this paper all along will be an effort to answer those questions.

When a patient comes into our office complaining of a lump in the breast, I think we should get a complete and painstaking history and make a careful examination of both breasts simultaneously. It is of importance sometimes not to ask the patient in which breast the suspected lump is located, for oftentimes we encounter individuals who are nervous and think they have discovered a lump in the breast when really there isn't one, and we might find it hard to disagree should we not adopt this precaution. The same precaution applies when a surgeon gets a case referred by a family physician, for unquestionably, sometimes, lumps disappear from the breast, and that might take place in the lapse of time between advice given by family physician to see a surgeon and the consultation. In that event lack of knowledge of the supposedly affected breast might aid him in his negative diagnosis.

After careful inspection, particularly of the nipples, both breasts should be palpated gently. I say gently, for I believe there is danger of dissemination if we squeeze, or roughly handle a carcinomatous tumor. After we have satisfied ourselves that there is a tumor in our patient's breast, the next important consideration is to determine its character. That brings us to a consideration of the general characteristics distin-

*Read before the East Tennessee Medical Association, May, 1117.

guishing a benign from a malignant tumor, which are as follows:

A benign tumor occurs at an earlier age, is encapsulated, freely movable on the surrounding tissue, not associated with any change in the skin, such as retraction or dimpling, nor atrophy of the overlying fat, and no metastases. Discharges from the nipple have been the subject of a good deal of controversy of late. A great many authorities think that unless the discharge, whether bloody or not, is accompanied by a palpable lump in the breast it is rather significant of a benign condition. Suppose we have a patient who is young, and has all the above mentioned earmarks of a benign condition in the breast: are we justified in adopting a watchful waiting policy? No. I think the presence of a growth in the breast is an indication for operation, as we cannot be sufficiently accurate clinically to justify a policy of procrastination.

Taking up the question of age incidence of carcinoma of the breast I shall quote Judd and Sistrunk, reporting on six hundred and nine cases operated upon at the Mayo Clinic, who state that there were thirteen patients in that series between ages of twenty and thirty years. Deaver says in his large series that "one of every seven women under thirty years of age with a tumor of the breast, was found to be suffering from carcinoma." So, then, the fact that a patient is young doesn't justify our making a diagnosis of a benign condition. Also the presence or absence of palpable axillary glands is practically valueless in differentiating benign and malignant tumors.

McCarty in a large series of cases—968 mammary carcinomas and 406 simple chronic mastitides—operated upon at Mayo Clinic, made an analysis of the relation of the clinical diagnosis made by the well trained clinicians of the Mayo Clinic to the pathologic findings as determined by a fresh tissue laboratory diagnosis. As a result he found that only thirty-seven per cent. of all cases of chronic mastitis were diagnosed correctly, whereas a correct diagnosis of all cases of carcinoma was made in seventy-seven per cent of instances. This represents, he says, a legitimate error of trained clinicians, who must realize that cancer starts as a microscopic condition. Why not, when we are in doubt and fear that we will do a mutilating operation, excise a piece for diagnosis, then two or three days later, when

the microscopic diagnosis is made, do the operation? In cases of carcinoma that is a very dangerous procedure and reduces the chances of cure tremendously. Again, if we await the appearance of clinical signs of cancer which are, of course, easy to recognize, we reduce the chances of a cure to less than twenty-five per cent. The ideal method, that of having associated with us a competent pathologist equipped to make frozen section examinations, can't be enjoyed by all of us. So that we should educate ourselves to make the diagnosis when we excise or explore a tumor, especially if we are to educate women that a lump in the breast is a serious disease, and should be investigated immediately. There are some fairly definite microscopic evidences of tumors, which will guide us as to the proper operative procedure to adopt, when we make an exploration, some of which are as follows:

When we find a growth definitely encapsulated, no matter what its microscopic picture shows, an excision will usually cure. Also when we find a single cyst, with clear contents, we can feel satisfied with just an enucleation. A cyst containing bloody fluid nearly always calls for a radical amputation, as there are almost always malignant changes in its walls. As indicated above, bloody or sero-hemorrhagic discharges from the nipple, accompanied by a palpable mass in the breast usually means carcinoma; on the other hand, when no palpable lump is present the condition is most often produced by an intra-canalicular papilloma, a condition considered by many men benign, especially in young women. I think we should consider the condition potentially malignant and remove the diseased portion together with a good margin of normal tissue. In older women the best treatment is removal of mammary gland.

Chronic cystic mastitis, or abnormal involution, has no diagnostic criteria aside from microscopic examination. There is a confusing list of terms used to distinguish this disease. Most every investigator has given it a new name according to the varied pathology which he found. Likewise, there is a great lack of uniform opinion among writers as to the methods of treatment. Some advise a radical operation in every instance of this disease, which is the result of confounding it with carcinoma. In this disease, more than all others, should we consider

the pathologist, the final Court of Appeal, in the question of diagnosis.

McCarty, of the Mayo Clinic, has probably done the best work on this disease in recent years. His work shows a close association (not necessarily the etiology, of chronic mastitis with carcinoma, in that there are three distinct types of cellular activity in the parenchyma of the mammary acinus, namely; primary, secondary, tertiary or migratory epithelial cytoplasia. The first condition is benign, the second is problematical, although it represents a precancerous histologic picture, and the third is the recognized picture of carcinoma. As a result of these studies, he has outlined the following plan of treatment: In doubtful cases in women, near or over thirty-five years of age the entire mammary gland should be removed (Warren plastic incision is a good one, for immediate microscopic examination. If primary or secondary cytoplasia be present nothing more should be done; if tertiary cytoplasia be present a radical operation should be performed.

In patients near or under thirty-five years of age the pathologic area along with wide sector of mammary gland should be removed for examination. If primary cytoplasia be present nothing should be done. If secondary cytoplasia be present the rest of mammary gland should be removed, and if tertiary cytoplasia be present the radical operation should be done. Summarizing then the treatment of benign conditions, I feel that the presence of a growth in the breast is an indication for operation provided the patient is not suffering from a grave systemic disease. Simple excision, plastic resection according to Warren's method, or subcutaneous amputation, may be employed depending on the location and extent of involvement.

The fact that women under thirty years of age are not uncommonly afflicted with carcinoma of the breast, and that carcinoma starts as a microscopic condition, should deter us from a policy of watchful waiting.

The fact that women are coming earlier with their breast lesions should stimulate a greater endeavor among us to spare them from the ravages of cancer, at the same time relieve them from the physical and psychic embarrassment of an unnecessary radical operation. We can accomplish this more often if we work in conjunc-

tion with the pathologist, who will give us accurate diagnosis from frozen sections.

Coming to the treatment of cancer of the breast, time forbids the consideration in detail of the various types of operation that have been recently devised. However, there seem to have been more additions to our knowledge of surgery of the breast along this line than any other. Notable among these newer operations are those of Jackson, Rodman, Stewart and Handley. They are all, except Handley's, really elaborations of the epoch-making work of Halsted in this direction. Jackson's, Rodman's and Stewart's have to do with the variation of the skin incision. Only Handley of London has made an addition to the deep operation in that he extirpates the upper portion of the anterior fascia of the recti muscles. He has shown that dissemination occurs chiefly by a process of permeation of the cancer cells along the lymphatics in the planes of the fasciae, thereby gaining access to the peritoneal cavity.

I think it matters little what method of operation one makes use of, so long as one gives the infected area wide margin of skin, fascia, and muscle, and dissection of axillary space thereby getting complete eradication. I believe in the vast majority of cases that a regular Halsted amputation, with the addition of Handley's idea, which makes the operation more radical, will give us as good results as any procedure we may adopt.

HERNIOTOMY.*

By W. A. BRYAN, M. D., F. A. C. S.,
Nashville.

At once it may as well be stated that the scope of the present discussion is to be restricted to oblique inguinal hernia, because this is so much more frequent than any other type, and, perhaps owing to its frequency, quite commonly neglected; but not because there is any impression that it is more important, case for case, than many other types either to the surgeon or to the patient.

In order to justify the conclusions reached it is primarily necessary to view certain obvious

*Read at annual meeting of Tennessee State Medical Association at Nashville, April, 1917.

facts connected with these patients, for sometimes we look too lightly on them and give them advice based upon immature study of hernia in

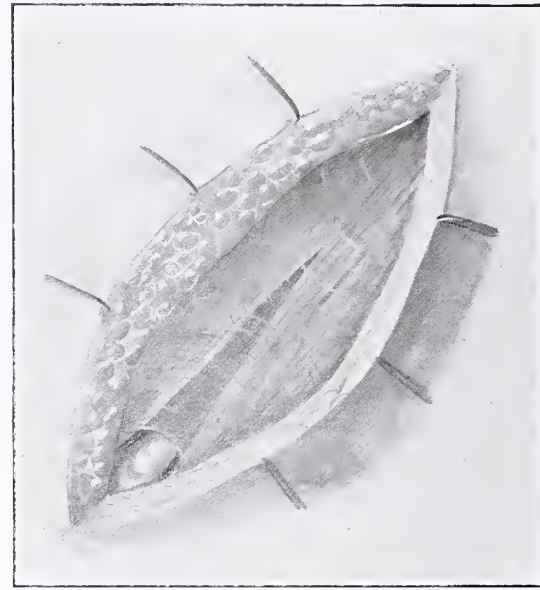


FIGURE 1.

Incision down to aponeurosis of external oblique showing weakened wall over the canal.

general; basing our conclusions upon the experience we have had with our own hernias, rather than drawing them from a broad study of



FIGURE 2.

Shows hernial sac after slitting aponeurosis anterior to canal.

the subject, and following numerous cases from their appearance to the declining years of life.

Every patient who has a hernia is a cripple,

both from the standpoint of the anatomist and the economist, a cripple in a much more significant sense than he who has a shortened leg or a deformed foot, and much more grave so far as the possibility of danger to his usefulness and his life are concerned. It has been my highest ambition since the beginning of my work to gain for myself a correct estimate of the lesions surgery undertakes to relieve, for advice must, when given to intelligent people, be supported by reason; and the thing that is uppermost in the mind of an undecided hernia patient is whether it is better for him to have an operation or not; and whether a truss would not be just as good as

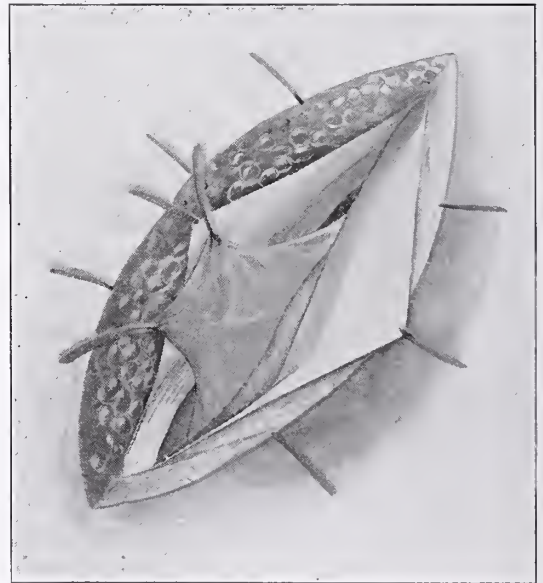


FIGURE 3.

Aponeurosis retracted and sac lifted before opening it.

an operation and less dangerous and expensive. This latter he sees recommended every day in the advertisements of every newspaper, magazine and religious periodical he lays his hands upon, often enough accompanied by a picture of the serious, kindly face of the man through whose inventive genius the Gods have deigned to confer this boon upon suffering mankind. Socrates has been accredited with saying that the only difference between himself and other men was that "He was a fool and knew it, while they were fools and didn't know it." It would probably not be going too far to apply similar comparisons to the profession of medicine and the wise-acre layman who knows no fact in connection with his case and yet has a most valuable

line of talk by means of which he conceals his ignorance from himself. The hernia case is no exception.

Every hernia patient is a cripple because he has an opening abnormal in size or position, through which abnormal protrusion of viscera may take place. This opening may be small; then it stands a very good chance to become larger. Large or small, strangulation, incarceration or adhesions may occur. The latter is not recognizable in the presence of the other two unless reduction is possible, and the former are only two big temptations to us to make fools of ourselves. Occasionally a gut is so traumatized by



FIGURE 4.
Sac opened.

effort at reduction that although reduction is finally accomplished, it results in the death of the patient. No man can tell the state of the intestinal wall strangulated in a hernia sac: to reduce a gangrenous gut does no good: but it does, by deluding him, deprive the patient of the only chance for recovery he had. If one could know that the gut wall were intact at the beginning, there is no means of estimating how much harm will be done in even a medium difficult reduction by taxis. The only rational alternative is then that if reduction is not the easiest it should be abandoned in favor of herniotomy: and if it is done easily no conclusions should be drawn about the next time: herniotomy should be advised. When these men grow old and begin urinating with difficulty their hernias descend upon them and their misery is multiplied.

The presence of a truss is not positive security against descent. This lesson came to me early in my career. I was called to see a man seventy-three years old: he had worn a truss fifty-two

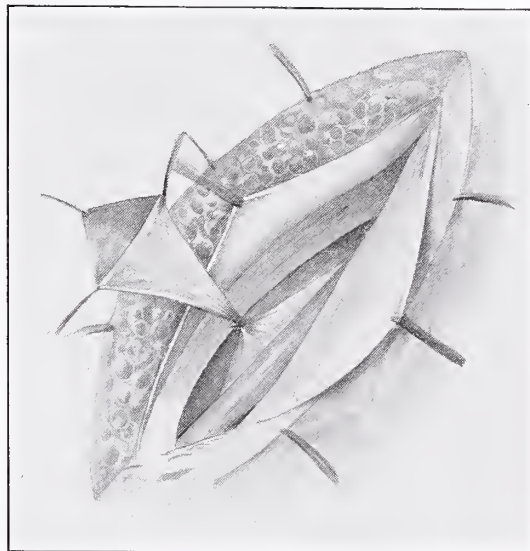


FIGURE 5.
Ligation of sac after reduction of contents and inspection.

years, a thoroughly satisfactory truss. So satisfactory, no doubt, that he would not have believed Moses and the Prophets if they had risen

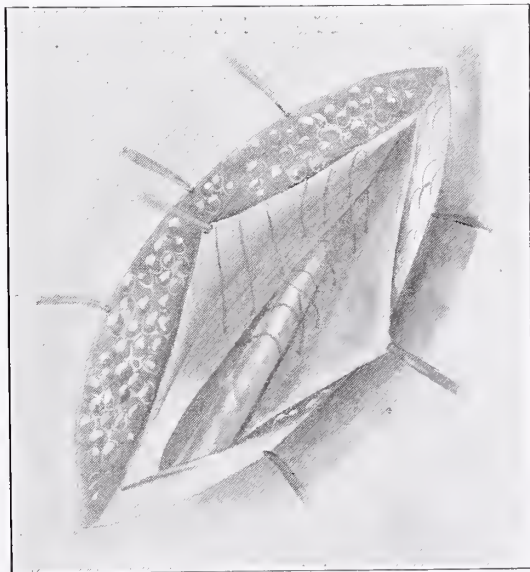


FIGURE 6.
Suture of transversalis and internal oblique to Poupart's ligament. Notice the sutures through ligaments are not in line.

from the dead and told him of his danger. One day he was sitting in his buggy and turned to speak to a friend, and the hernia came down and

would not reduce either at his hands or those of his physician; when on the next afternoon he was operated on the gut had become gangrenous and the mesenteric veins thrombosed.

Trusses are not secure; they cause absorption of the tissues upon which they press, even of the aponeurosis and muscles which must be used for closure of the defect when years afterward the patient chooses an operation to rid himself of the two nuisances of hernia and truss, and make the operation more difficult in the first place, less

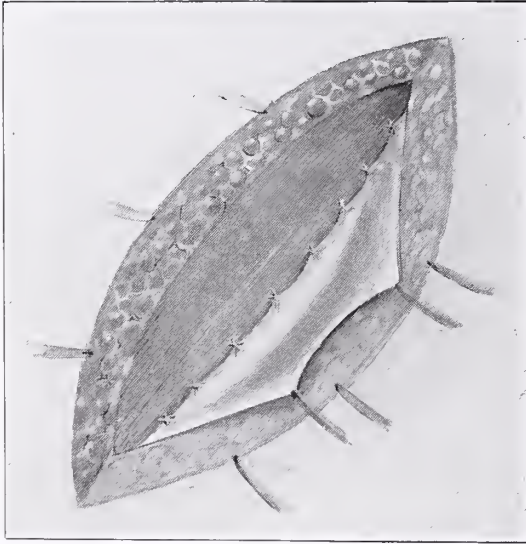


FIGURE 7.

Shows upper edge of aponeurosis suture with interrupted sutures to Poupart's ligament.

secure in the second. Trusses should, therefore, be relegated to the archives of surgery except for those cases where for manifest reasons an operation of this magnitude cannot be safely done.

In other words, I believe that every hernia should have a herniotomy, because the operation is safer than the make-shift. Every case of strangulated or incarcerated hernia should be operated at the time or subsequently, for there can be no doubt that it is safer than repeated reductions and leaves the patient well.

I believe that herniotomy should be done in preference to prescribing a truss and to displace the truss for reasons already given.

The operation for cure of hernia should give the least amount of trauma possible; it should give the greatest security against recurrence; it should disturb normal relations as little as possible: it should give secure healing in the shortest

time. I have been unable to think of other important requirements for an ideal operation. Still it must not be inferred that I think that any single operation could meet all the requirements for the various conditions arising in inguinal herniotomy.

Formerly the operation of choice with me was Bassini's; but for more than one reason I adopted Ferguson's in its stead and have been so much better pleased with it that I use it now almost exclusively. The features that first attracted my attention to its importance were that it left the cord in its normal bed, whereas Bassini's required its transplantation. This probably amounts to nothing so far as function and future comfort of the patient are concerned: but it is worthy of the operator's consideration inasmuch as it will usually be unnecessary to displace the cord from its bed. This is especially true if we hunt for the hernial sac at the point where it can



FIGURE 8.

Suturing the lower side of the aponeurosis overlapping the upper and reinforcing the wall.

be most easily and certainly identified, namely, at the deep ring; open it and insert a finger distalwards and, using this finger as a guide, dissect the sac from its bed by disturbing other cord attachments as little as possible.

In the second place the origin of the transversalis and internal oblique are not attached to Poupart's ligament widely enough, far enough inward, to make the closure of the internal ring secure against recurrence, and this perhaps more

than any other feature in the cure of hernia has to do with recurrence. Hence, after properly dealing with the deeper tissues these muscles are sutured to Poupart's ligament, giving them a new attachment wider than normal. This line of sutures lies superficial to the cord. It is necessary to remind ourselves that Poupart's ligament is made up chiefly of longitudinal fibers rather feebly held together and that if all the sutures of the line are of the same depth it is likely to split and thwart our work. Some suture the upper margin of the aponeurosis of the external oblique at the same time to Poupart's. I believe it wiser, though a little less speedy, to suture it separately, for it undoubtedly puts less tension on the suture holes in the ligament and gives a somewhat stronger temporary line of union with a smaller theoretical chance of recurrence.

Third, owing to the fact that the aponeurosis is very often attenuated from wearing a truss or all but split as the most superficial observations of its fibers as they diverge toward the superficial ring will show; it would seem to require no argument to convince us that restoration of these cut margins edge to edge would mean only a restoration of the old weakness of this plane of support. Hence, Ferguson has wisely elected to overlap the lower flap on the upper one and suture it in place. It is superfluous to say that unless the superficial surface of the upper flap is cleared of fat and loose fascia the resultant union will be frail and favor recurrence. Many employ continuous sutures for all these lines of union. I prefer interrupted sutures from the deepest to the last one which overlaps the aponeurosis. The reason is simple: if an interrupted suture breaks or slips, only a fraction of the line of union is broken; if a continuous suture breaks, the whole line is worthless. The subcutaneous fat and fascia are now sutured, and finally the skin.

The most helpful point I know in doing this or other herniotomy is to clean the tissues and make accurate dissections as you proceed with the operation and expose and prepare as you come to them all the structures you will need to rise in closure of the wound.

It is sometimes thought that a very tight bandage is useful after herniotomy because it is supposed to help support the lines of union until healing occurs. We are confronted in this,

though, by the paradox that a bandage tightly enough applied to do good along this line can only do harm, for if applied sufficiently secure to help hold the tissues it will interfere with circulation and the formation of permanent tissue. Indeed a collodion dressing is just as good as any, and is to be preferred in small children.

Doctors' Building.

BLOOD VESSEL ANASTOMOSES.*

By E. T. NEWELL, M. D.,
Chattanooga.

The above title was decided upon for my subject for the reason that I have recently operated upon two interesting cases of brachial artery wounds, closing the vessels by anastomoses. Blood vessel surgery is receiving especial attention at the present time, as pointed out in a paper, "Some Pertinent Points in Vascular Surgery," that I read before the Tennessee State Medical Association in April, 1915, and also by the many contributions to be seen in present-day literature.

Operations on blood vessels date back many centuries, but the real surgery of blood vessels has only been done in very recent years. Postmeski, of Rome, in 1886, closed an accidental wound in the femoral artery by suturing it. This was the first successful operation of its kind ever performed on man. Rudolph Matas, of New Orleans, La., closely followed, in 1888, by closing with sutures an opening in an aneurism that continued to bleed after it had been ligated, both distally and proximally. Thus began the great era of blood vessel suture, arteriorrhaphy. But it was not until 1897, when the lamented John B. Murphy published his classical paper on "End to End Anastomoses," experimentally and clinically, that arteriorrhaphy became a practical procedure. Great strides have been made since then in this work—the attention of the profession having been called to the possibilities of blood vessel surgery, many men are perfecting themselves in its special technique. Then the laity, that great mass of human beings, ever ready to accept and take up

*Read at annual meeting of Tennessee State Medical Association, Nashville, April, 1917.

anything that will save limbs from amputation, are demanding that blood vessels be sutured whenever it is possible and that conservative surgery be done upon injured and mangled extremities.

An extremity in which the main line of the blood supply has been damaged, and that was formerly amputated, is now saved by suture of the vessel. It may be a simple suture of the vessel, or a patch with a piece of a near-by vein, or, if great destruction of tissue has taken place, the gap may be filled with a section of a vein, or with a heterograft that has been kept alive for days or weeks in isotonic salt solution. The solution must be kept at four degrees centigrade, to insure the graft being kept alive.

It is more than probable that there will be located, at different points in this country, depots to keep on hand a full supply of the necessary arteries, veins, bones, and skin that may be required in a given case. While it is known that the heterografts do not do as well as the autografts in all cases, they are quite practical and in some cases give perfect results. For instance, I once transplanted two and one-half inches of a human radial artery, that had been kept for a week in isotonic salt solution, into a space that I had voluntarily made for its reception of equal length between the ends of the carotid artery of a dog. The dog lived, the vessel pulsated immediately and for months afterwards, but unfortunately six months after the operation the animal ran away from the veterinary hospital where he was kept and so far I have been unable to locate him. I had hoped to dissect out the specimen at the end of a year and preserve it, replacing the piece removed with a new transplant for another year, and so on and on.

Instances of skin and bone transplantation are too numerous and too frequent to more than mention. The perfection of bone instruments is making bone grafting operations much easier and more frequent.

The indications for anastomoses of blood vessels are many, but at the present time the cases in which it is usually applied are those following a severance in part or in toto of the blood vessel by a knife, gun-shot wound, sharp piece of metal, etc., on the one hand, and those where the vessels are united for transfusion on the other. When the anastomosis is done for a simple transfusion (a temporary anastomosis) the method is

usually quite different from that used when a permanent anastomosis is established. In the transfusion anastomosis the Crile canulas, the Bernheim canulas, the Brewer glass tubes, the Fauntleroy tubes, etc., are more often used than the sutures. However, some few men, as Horsley, of Richmond, Va., sew the vessels together, as for a permanent anastomosis in every case of transfusion they do. Personally, I prefer the Brewer or the Fauntleroy glass tubes, or those of a somewhat similar design. Transfusion of blood is indicated in so many conditions, especially in the acute anemias following traumatic injuries to blood vessels, ruptured ectopic tubes and vessels, post-partum hemorrhage, post-operative hemorrhages, etc., that no institution should be without some form of equipment necessary to its performance. The indirect method of transfusion of blood is quite popular with many of the best men in this country. The Lewisohn citrate method has its advantages and disadvantages. The advantages are that you can take plenty of time, the large needles that are used, as a rule, to draw the blood do not get clogged up easily, and there is a minimal danger of clot formation. I have on one occasion kept a pint of human blood in 2-10 of one per cent sodium citrate solution for twenty-four hours without the formation of clots. The disadvantages are that you have to keep the citrate solution always freshly made up, and a fresh supply of distilled water constantly on hand for the preparation of the physiological salt solution necessary in this method.

In the direct method of transfusion by anastomosis, or with the canulas, you need only the fewest of ordinary surgical instruments with blood vessel needles and suture materials. The disadvantages of the citrate method were forcibly impressed upon me in a recent case that I had of illuminating gas poisoning. The patient was rushed to the Sanitarium unconscious, pulse and respiration bad and face dusky. His wife accompanied him in the ambulance and volunteered to give her blood. I decided upon the citrate method as I had been using it experimentally earlier in the night on some dogs. I found I did not have enough citrate to make up a quart of the requisite solution, so had to get some distilled water. There was quite a delay in getting freshly distilled water for this pur-

pose, and it was fully forty-five minutes before I had the citrate blood solution ready to inject into the husband. In the meantime, the patient had improved so under oxygen inhalation that I decided to wait and finally did not give it. If I had used the direct method as soon as he came in, I could have had a good stream of blood flowing in less than thirty minutes. Horsley, of Richmond, claims to do such anastomosis in fifteen minutes. Of course this case was emergency work and is an exception.

Technique: There are two methods of blood vessel anastomoses, lateral, and end to end, just as we have in intestinal anastomosis. And just as you find in intestinal anastomosis many suture modifications, so do you find suture modifications in this work, each one taking the name of the surgeon who improvised it. The lateral anastomosis is not very popular with any of the operators and is not used except between an artery and a vein for reversal of the circulation. Of the end to end anastomoses, the invagination method of Murphy, as well as its modification by Payr, using magnesium rings, are both quite popular. More recently Geo. W. Crile's anastomosis canula for quick work has become a method extensively used. Still more recently, the ideal method of Carrel, known as his tri-angular method, using the continuous whip stitch is perhaps the best method of them all. J. Shelton Horsley modified Carrel's method by what he calls his double mattress or cobbler's stitch. This last method it has been my pleasure to see Dr. Horsley do in his laboratory and it seems ideal. I have used principally in my work a modification of Carrel and Horsley, the single, continuous mattress suture. The double suture is probably a little more difficult and possibly a little better, for the line of suture does not seem to leak as much as the other when the blood stream is first allowed to pass through the anastomosis. It is well to remove the clamp on the distal side of the anastomosis first. This allows a little blood to come in contact with the suture line and plug any small holes that may have been produced in and around the suture line. Remove the clamp on the proximal side slowly, so that the pressure may not be brought to bear too quickly on the new union. In case there is slight bleeding or oozing, if you will wait a few moments it will probably cease. If not, a few supplementary sutures may be taken

that will suffice to stop it.

Without going into the minutiae of the many different points in this particular work, I wish to mention a few salient points that you should follow, or avoid, if you wish to have success. First, you must dissect back the proximal and distal vessels for a distance of one and a half to two inches on either side, so that you will have plenty of room and freedom for manipulations which are absolutely necessary in applying sutures. The vessel should be raised out of its bed so that it can be attacked around its entire circumference. This can be done with the three traction sutures as suggested by Carrel, which can be held by two assistants with any small haemostats. Or it may be held by Horsley's arterial staff, a very simple and effective instrument. The writer has a blood vessel rack which he uses for this same purpose, but has not had the opportunity to use it extensively enough to make claims of superiority over the other instruments now in use.

The ends of the vessels to be sutured should be cut perfectly smooth with a sharp pair of scissors, the redundant adventitia should be pulled over the end of the tissue and cut off. The mouths of the vessels, as well as the first portion of the intima should be coated as soon as possible with sterile vaseline or, better still, albolene. It is all important that you do not irritate the delicate endothelial cells of the intima, for they will resent the intrusion upon them by the formation of a ferment that will act upon the fibrinogen of the blood, producing a clot that will later occlude the newly formed union between the vessels. For this reason, do not touch the intima in performing the anastomosis with forceps or other instruments, unless absolutely necessary, and under such circumstances use the special round point forceps of the Bernheim type. The needles should be the smallest No. 16, threaded with (0000) Japanese silk, preferably black. The needles and thread should be well annointed with vaseline or albolene, and the field of operation covered with a vaseline soaked sponge. This suture material is suitable to the smallest arteries, of the type of radial, ulnar, posterior tibial, etc. Crile uses white silk, threading his own needles, but the needles with black thread put up in albolene in sterile tubes, as suggested by Bertram Bernheim, I find very convenient for immediate use in emer-

gency work. Lukens also puts out blood vessel sutures in sterile tubes ready for use.

The most important point in the entire technic of blood vessel suture is the complete eversion of the mouths of the opposing vessels, so that when your suture has been applied you have intima to intima with no intervening adventitia or other tissue, and none of the suture material exposed on the inner side of the vessel. In larger vessels, of the class of the axillary, iliac, femoral, etc., you may use large needles with slightly larger thread. This makes the operation much less difficult. It is in the smaller vessels where it is so essential not to injure the intima with forceps, with your clamps or with undue needling, that it requires the greatest skill on the part of the surgeon. If your sight is poor, if your hands tremble, if you are in a hurry or have not patience, do not attempt to suture small blood vessels.

It is not in the scope of this paper to deal with the suture of aneurisms, but I feel that I cannot pass the subject by without mentioning Rudolph Matas' wonderfully ingenious operation, endo-aneurismorrhaphy. This is a classic and will stand the tests of all time. The use of the Matas-Carroll aluminum band when the collateral circulation is good does away with the necessity for the endo-aneurismorrhaphy operation in many cases. The tests for the efficiency of the collateral circulation is so simple and too well known to all of you to describe.

Report of Cases:

Case No. 1—Dr. M. M. B., white, male, age 40. General practitioner. While cleaning a revolver in March, 1916, was accidentally shot through the upper third of the left arm, the ball entering on the anterior and outer aspect, coming out on the inner side of the arm. He bled profusely but corded his arm and stopped the hemorrhage. He came to a local sanitarium in our city and as there was a great deal of swelling, discoloration, and no pulse in the brachial below the site of the wound, nor in either the radial or ulnar artery, amputation was advised. He protested against this and suggested suturing the vessel instead. I saw him at 11:30 a. m., three hours after the accident and found the arm as above stated. The patient was suffering intense pain from the tourniquet which had been applied during this entire time, and was also quite shocked from the pain and from the loss

of blood. He was anaesthetized at once, the wound of entry of the bullet enlarged about two inches on either side and the course of the bullet followed down to the brachial artery, which we found had been cut as cleanly as if a tenotomy knife had been inserted through the tissues and down to the artery for that purpose. No nerves were injured, no muscles were cut entirely through. The ends of the vessels that were ragged were now clearly cut off with sharp scissors and the vessels united by the ideal method of Carrel. The blood was turned through the anastomosis, the union being complete and there was no leakage. Instantly you could see the brachial artery below the anastomosis pulsate. The radial and ulnar pulse was counted by one of the nurses in attendance. The arm was put up in a splint and the patient put to bed and cautioned to keep very quiet. As he was a doctor, he obeyed instructions very poorly, was up around the room the next day, going to the bath-room, etc., and left the sanitarium on the fifth day against our protest. He returned to the assisting physician on the seventh day to have the skin sutures removed. After this he was not seen by any of us until two months later when he dropped by to say that he was doing his regular work and had been doing so since the tenth or twelfth day after the operation.

Two interesting points about this case are as follows: First, the injury was in that part of the brachial artery above the superior profunda where the collateral circulation is the very poorest, and where in an acute condition like this, it would most probably not have been sufficient to have maintained the life of the limb. Second, the operation was done in an operating room foreign to the operator with assistants who had not helped in an anastomosis of blood vessels before, showing that the work can be done under almost any circumstances by one who has had a little practical experience in this special line of work.

Case No. 2—J. W. (C.), male, aged 27. Laborer, Chattanooga Railway and Light Co. On the night of January 27th, while sweeping out the car barn, a co-worker slipped up behind him, slashing him in the back and also inflicting a deep, ugly cut three inches long at the bend of the left elbow. When he was brought into the Sanitarium he was pulseless from the loss of

blood. Realizing that he was about to die, I elevated both lower limbs and his right arm, cording them close up. I also noticed that the blood had stopped running from the cut at the bend of the left elbow, so was careful not to disturb this extremity in any way. The patient was given 1-4 or morphine and 1-150th of atropine, and then one quart of physiological salt solution was injected into the median basilic vein of the right arm. I would have transfused him, but had no donor. In about twenty to thirty minutes a little radial pulse could be felt on the right side. I may say that the patient was wrapped in blankets and packed in hot water bags for the next two hours. At the end of that time, as there was no radial nor ulnar pulse in the left arm, I thought that the brachial artery must have been severed. The hand was getting quite cold in spite of artificial heat that had been applied, so I at once set about to do an anastomosis of the supposedly severed vessel. On enlarging the wound inflicted by his assailant, for an inch at each end I found that his cut led directly down to the brachial artery and that it was severed just as it bifurcated into the ulnar and radial arteries, so that instead of two openings in the vessel, as you usually find after such an injury, there were three—one in the brachial, one in the radial and one in the ulnar. As the ulnar at this location is larger than the radial, the radial was ligated and an end to end anastomosis of the brachial and ulnar arteries done after the ideal method of Carrel. The motion pictures that I will present to you tonight show the vessel pulsating after the clamps were removed from the distal and proximal ends of the vessel. The ulnar pulse was felt faintly the next morning. The blood pressure was so low the night of the operation that I could not even feel the ulnar pulse on the unaffected side. The patient made an uneventful recovery and went to work back at his old place on the twenty-first day. The pictures of him taken at the end of the fourth week reveal a perfect left arm and fore-arm.

In the olden days when blood-letting was so frequently resorted to for almost any ailment that the human flesh was heir to, injuries to the brachial artery at or near the bend of the elbow were of quite frequent occurrence. Many an arm at that time was sacrificed that could be saved at the present time.

Case No. 3—A. W., white, male, age 42. Foreman of wrecking crew, C. N. O. and T. P. R. R. Had his hand extensively crushed under a heavy piece of timber, necessitating the amputation of all the fingers and metacarpal bones except the thumb and the index finger. The ulnar artery as it wound around into the palm of the hand was completely destroyed and had to be ligated. The radial artery was bleeding just as it crossed the wrist from a longitudinal tear in it. A few interrupted sutures, arteriorrhaphy, were inserted, the wound in the skin closed and a good patulous vessel was maintained. Sufficient blood went to the thumb and finger to save them both and the man had a fairly useful hand thereafter.

These three cases of arteriorrhaphy have occurred in my practice in the last year and go to show that the practical application of blood-vessel suture and anastomosis should be of common occurrence with those doing this special line of work. However, to my mind, we are only at the beginning of this wonderfully interesting work, the possibilities of which, now that we can successfully unite nerves, arteries, veins, bone, muscles, etc., are almost too many and too wonderful to think of. —

DISCUSSION.

DR. J. H. BARNETT, Chattanooga: I am quite sure Dr. Newell deserves a good deal of credit for taking up this phase of surgery. The results in that doctor's case and the negro's case are extremely good. Either of these cases by any other method of treatment or handling would have meant amputation and the resulting crippling of two men and the loss of efficiency of two citizens.

This is a unique field of surgery, and I am indeed glad to know that we have in the City of Chattanooga a man that is so progressive as to take up these things. I have read about them. I have seen some of the work, but you have no idea how exceedingly careful you have got to be. I am rather young in operative experience, and I have a little bit of tremor when I look at a thing right close. I have not undertaken any blood vessel surgery because I cannot see well enough. I am not scared, but the position of bending over would absolutely prevent me from doing blood vessel surgery. If I had some way of propping patients up so that the field of operation would be very near, I could manage all right.

The transfusion of blood is a phase of the paper that is sadly neglected in surgery. Numbers and numbers of patients can be brought up to an operative condition by the proper transfusion of blood.

I recall to mind one case in my experience where a patient had a massive hemorrhage of the stom-

ach. She was in danger of immediate death and we decided to do a transfusion. At that time I was doing my transfusions by the Crile method. I mention this now in order to show you that you can overdo a good thing in surgery as well as in medicine. This patient had soft gums and pyorrhea, as most of these cases have, and we got a beautiful connection of the radial artery with the vein in the recipient's arm. We let the blood flow in; we did not know how much. You cannot measure it when you connect blood vessel to blood vessel, and we let it run over a little time until we decided the patient had enough—until she began to show red cheeks in fact. We almost killed that patient with an acute dilatation of the heart. The gums bled and my larger transfusion was about as bad as the patient had to start on. In these transfusions we cannot measure the amount we give. I prefer the Kimpton-Brown method of transferring blood. It has a simple intake like an overgrown test tube, and the intake in the bottom and opening in the tube have an attachment to a common bulb—like you have to an atomizer. The top of this tube is closed with a cork. It is prepared by the nurse and kept always ready for use. If you had to wait for the transfusion in a case of necessity until the nurse could fix this apparatus, your patient would die or get well before you could do your transfusion. It is prepared in this way: first, the instrument is boiled, then it is rinsed thoroughly with alcohol inside and out. After the alcohol is drained out, the instrument is again washed with ether. After it is dry, about an ounce of melted paraffin that has been melted sufficiently or held sufficiently long for sterilization is poured in, and the instrument is turned upside down and the paraffin runs around the cork and makes it airtight. This coats the inside of the tube with paraffin, and one of the peculiarities of the blood is that it is slow to coagulate when it touches paraffin. You notice paraffin is used in this suture and used in this tube for the same purpose. This is entirely closed. In the preparation of this it is simply wrapped in gauze and put in the sterilizer and sterilized like any dressing and kept sterile until ready for use.

As to how to prepare the patient, the donor, lay bare a vein and introduce the intake of this tube towards the end, so that the venous pressure fills the tube to the amount of blood that is desired. The donor takes it in a vein somewhere, except it is turned towards the patient's heart, and, as a rule, the upper opening of the tube allows by gravity the blood to flow into the vein. If that is not sufficient, take the atomizer bulb and make pressure, and that forces the blood right on in. The advantages of this are that the blood is given fresh, and the amount of blood is measured.

I do not believe that it is safe to give a quart of normal saline intravenously. I do not believe it is safe to put a quart of anything into the circulation

suddenly. It is all right to do it slowly, but transfusions are not done that way. About six ounces is about as much blood as a patient should have at one time.

DR. W. T. BLACK, Memphis: The essayist did not state whether he had blood examinations made in all these cases before giving blood from the donor to the recipient. He did not say anything regarding the hemolysis, the agglutination, or the Wassermann tests as having been made before he resorted to transfusion. Even in a case of emergency it would be dangerous to give a patient blood without careful preliminary examination of the donor's and recipient's blood. The examinations should be made in every case, if possible, first.

In regard to giving blood, the indirect method is the most commonly used method. The one I have had the most experience with has been the citrate method, using the Leuessoehn needles. I have the outfit that Dr. Barnett spoke of, the Kimpton-Brown tube, but sometimes it is hard to get the instrument prepared properly unless the paraffin coating is complete and properly prepared and given in a short space of time, you will have clotting. Of course, given in the same institution with the same assistants, the defects in technic are obviated and the method is a good one. By using the above needles you obviate the necessity of cutting and tying the veins—you stick the needle into the vein like you would when you are going to obtain the blood for a Wassermann test. You constrict the arm and the blood runs out into the citrate solution, and you can give it direct into the vein of the recipient without cutting into the vessel—without doing permanent damage to the vessel. I believe this is the simplest method. The blood can be kept sometimes for hours, but I have seen blood clot immediately after removing it by using an old citrate solution. It is, therefore, desirable to have made examinations of both the donor's and recipient's blood, and find out whether they are compatible before resorting to blood transfusion. In patients who are in a desperate condition and where the life of the patient might be jeopardized by waiting for an examination of the blood, it is probably better to transfuse after a careful analysis of the donor's history.

DR. NEWELL (closing): I have nothing further to say except to answer the question of Dr. Black in regard to hemolysis. A great many men contend that in acute hemorrhage, particularly in young persons, it is not necessary to make the test. It is perfectly safe not to do so. Dr. Horsley said that where there is a pathologic condition like pernicious anemia it is necessary, and I do agree with him in that. I think the point made by Dr. Black is well taken. I think in some cases you may give 20 or 50 c.c. and have no trouble. You had best take some near relative of the same type for the purpose of transfusion and you will be less likely to have hemolysis.

I was very anxious to know if we could not use a negro's blood on a white person. I have made several tests of this character recently, and in all of these tests hemolysis took place, so it would not be proper to use such blood in transfusing.

WHAT IS THE WAR ABOUT?

FELLOWSHIP ADDRESS BEFORE AMERICAN COLLEGE OF SURGEONS.

By SIR BERKELEY MOYNIHAN, C. B.,
Leeds, England.

What is the war about? How has it come about that America and England are standing side by side in so bitter and stern a conflict against Germany and Austria? What are the strange circumstances which at last have ranged against the Central Powers of Europe almost all the free peoples of the world?

No doubt many answers, each conflicting with the rest, and yet each containing some small grain of truth may be given to these questions. We may say, for example, that we fight against the continued aggression of Prussia and those other German and Austrian powers whom Prussia has inspired and instigated. No one can doubt who reads history with an unbiased mind that Prussia has increased often, if not always, at the expense of other states by acts of sudden and unprovoked aggression. Certainly from the hour when in the midst of peace Prussia laid rude and violent hands upon Silesia, her own aggrandizement, her territorial increase, and her growth in power and possessions outside her own borders have been due to the wars she has waged. War is the national industry in Prussia; it is her means of acquiring wealth. It is by her military success that she has enlarged her borders, added to her own infertile lands, solidified her gains, and been able to prepare for a still further attack upon her next chosen victim. A state may advance in power, and in all that power implies, in wealth and prosperity, and in the happiness of its citizens by acquisition from without, or by growth from within, by discovery and development of its own resources, and by directing all the energies and talents of its people to its own internal advancement. No state in history can compare with

Prussia in its exploitation of the doctrine of plunder; the doctrine of taking because it has the strength to do so. Quite consciously and quite unabashed she has possessed and gloried in the possession of this power, has fostered it, and with deliberate and frank intention has exerted it at her own time and for her own ends. She sought dominion, she had her own confident and unwavering conviction of her power to seize it, and of all the means by which it was firmly to be held. From her point of view she had every reason to think her methods were right. Not for one instant, of course, did she call in question the principles or doubt the ideals which underlie her action.

The greatness of Prussia, the dominion of Prussia, which grew at last into the lust for world dominion by Germany, were embedded deep in the very fabric of the Prussian mind. Perhaps not so much embedded as incorporated, distributed, that is, equally and generously through every part of her national consciousness. The successes of 1864, 1866, 1870, are, even at this long distance of time, stupendous not so much in their material results, remarkable as these were, but in their disclosure of a mighty and well-ordered power that seemed to move irresistibly along a predestined path, to a goal which had been long foreseen and calmly and securely chosen. Never, it is safe to say, in warfare before had plans been so carefully laid, never had they matured in more perfect accord with such design. In this war also we learned without surprise that the official communique published in Berlin in the first weeks of the war, told with laconic precision that "everything proceeded according to plan." If anything on earth was infallible, surely, said the German nation, our army and its leaders are infallible. The motive of the war, if this answer were true, would be Germany's ambition.

Or, we may answer my question differently. We may say that Germany had grounds for her belief that she was a nation encircled by hostile powers, jealous of her splendid growth, of her swift acquisition of wealth, of that armed strength afloat and ashore to which she added daily. And we may listen to her passionate utterance that her access to blue water was barred, her commerce crippled, that she was denied that "place in the sun" to which her might entitled her. We can understand Germany,

though we cannot for one instant agree with her, when she says that for her this is a war of defense, that she is fighting for a way out of the strong iron bastion that has been built up round her frontiers. Prussia in her early days never had a frontier, and her first conscious act as a nation was to forge out of her army the frontier which nature had denied to her. The motive of the war, if this answer were true, would be Germany's fear—fear—the black godmother of cruelty.

These are the conflicting answers that may be given by one side or the other. But anyone who has given thought to the matter (and who has not?) must agree that whatever else this ghastly conflict now is, it is in simple truth not a clash of merely material interests. This is a moral war. It is a holy war if ever there was one. It is deep down a war between conflicting and discordant and uncomfortable moral systems. It is a war, therefore, in which a real peace cannot come by compromise; for you cannot come to any terms but one, with that which you feel to be a principle of evil, with that which you feel in your innermost soul to be the deadliest enemy to mankind, and the most menacing blight with which civilization has ever been threatened.

What then are the issues at stake? How is the question I put to be answered? Let us examine the principles which appear to underlie the action of the protagonists in this very whirlwind of war. The principle ground into the very fibre of the German peoples, accepted by them, gloried in by them, worshiped by them, inspiring them, is the principle of *tyranny*. What exactly is meant by that? It implies a complete surrender of individual rights and liberties, and an unquestioning submission of them to a power exercised exclusively from without. This power may be called the state, or the dynasty, or it may be a ruling caste. It is something outside and above the individual, uncontrolled by him, owing no allegiance to him, but directing him and ordering all his actions in a manner and in a direction which he is told is for the benefit not only of the paramount authority, but incidentally or consecutively of himself. Tyranny, that is to say, is the power exercised by an irresponsible autocracy; it is the supremacy of the state carried to its ultimate expression; and it is by implication, an attribute of every individual in the state. This is no ignoble creed,

and Prussia, let us tell it to her credit, has made a robust philosophy of it, and has gained the staunch and willing adhesion to it of almost every man in her nation. Vigor and efficiency are the practice of this creed; that "might is right" is the law by which it lives; courage is its inspiration; in success is found its ample apology. Treitschke tells us in terms that cannot be misunderstood that the "state is power," and that nothing can conflict with the state's duty to uphold and extend itself by the exercise of might. This is in truth, the Religion of Valor.

Over against this what have we set up, on our side, as our standard? What is the principle by which we are sustained; whence do we derive our soul's refreshment? It is hard to find the precise word, but none fits so well as "Liberty." And by liberty we mean here the inalienable and indestructible right of every human being to express himself, to be himself, to develop from within. The relationship of a man endowed with and encompassed by such liberty to the state is simple enough. The laws which govern and control him are laws which he himself has helped to make, and to which he, with others like him, willingly conforms not so much because the laws are good, but because they are laws which he and those who have gone before him have in freedom imposed upon themselves. This is democracy. To us as surgeons practicing a scientific profession, the conflict between these irreconcilable principles is of deep significance. For let us consider their application to education.

Tyranny in the sense in which I have used it means that every unit in the nation must receive an imprint, a stamp from the state, indicating his training and value. The doctrine of tyranny implies that for the service of the state every individual must receive such training as will fit him to be, and ensure his becoming, a willing and obsequious servant of the state. This necessarily implies the possession, or the capture by the state of all the machinery of education. Is this in fact what has happened in Prussia and in Germany? There can be no doubt whatever about the answer. The German educational machine is an absolutist machine, a possession of the central authority, exactly as is the navy or the army. Bismarck said on August 11, 1893, "The school is an important part of Germany's

national institutions. The German school like the German corps of officers is a specifically German institution which no other nation can easily copy. In the course of the last few decades the seed sown by the schools among the youth has borne fruit and has given us a national political consciousness which formerly we lacked. The most potent influence which the body of the teachers brings to bear upon German national education consists in this, that when the German teacher receives the child its mind is like a white sheet of paper. What the teacher writes on it is written with indelible ink. It remains for life. The youthful soul is soft and receptive, and we all know that we never forget what we have been taught between the ages of 7 and 15 years. The lessons then impressed upon us guide us forever. In this perceptivity of youth, in the fact that the minds of people may at an early age be moulded for all time, lies the power which the German teachers have over Germany's future. As I have said on a former occasion, he who controls the schools controls the future."

Education in Germany may be obtained in public or in private institutions. The last figures available showing the number of students attending German schools are for the year 1911. In that year there were 11,050,620 pupils in public schools as against 126,278 in private schools; a proportion of 88 to 1. In Prussia alone the numbers were 6,674,989 in public schools to 8,996 in private schools, a proportion of nearly 750 to 1. The importance of this gigantic difference is realized when it is understood that the teachers in the public schools "have the rights and duties of state officials"; that is, they may plume themselves with all the petty arrogance which is inseparable from a Teutonic official, but they must submit to that iron discipline which regulates their conduct, and must curry favor with stern and unbending authority upon which their career entirely depends. And this firm and unrelenting grip fastens also upon the universities and upon every professor. None can hope for promotion, or for those titles and distinctions which are so precious, unless he is in all essential things in agreeable conformity with those who exercise control. "No scientist, however eminent, can hope to obtain a professorship in Prussia if he is *persona ingrata* with the government, and a

professor who opposes the government, unless he acts with the greatest moderation and circumspection is likely to lose his position and income." The German government exercises practically unlimited influence over the universities rather by indirect than by direct means. The university professors can be controlled or cajoled by the Minister of Education who exercises vast powers and distributes a valuable patronage. All of us know how influence of this kind may be wielded, and how swift and heavy may be the visitation for a grave offense.

The state then in Germany not only owns the educational establishment but elects and trains the teachers in the several grades of schools, confers upon them the rights, and exacts from them the duties of state officials, and finally exerts a firm and purposeful direction upon the instruction given to all pupils. For its own objects the state uses the didactic weapon with a strong hand, and a farseeing and ruthless purpose, and she makes no secret of her intentions. The Kaiser himself in an educational address has said, speaking of the use of the school as a political weapon, "If the school had done what must be demanded of it, it should at once and on its own motion have undertaken the fight against social democracy. The teaching boards ought to have combined and ought with energy to have instructed the growing generation in such a manner as to furnish me with material with which I can work within the state. Then it would have been easy to overmaster quickly the Socialist movement," and again, "Men who support radical Utopias can as little be employed in education as they can be employed in the government offices"; and that this view of the duty of the state to use this instrument still continues, we have the authority of Friedel who states that today "both the Prussian Government and the Imperial Government of Germany were stealthily taking every step towards a centralization of control of German education in order that under the political influences of the Imperial Government every school, every university, and every educational outpost of Germany after the war might respond at once to instructions from the center, and use its intellectual propaganda for Germanic ends." German education both before the war, and since the war began, has indeed been a master weapon in the hands of the military party, and

there is, as we learn without surprise, every intention that the strength of this implement shall be used as ruthlessly as ever in the service of the state. There is evidence, M. E. Sadler tells us, and there is no better informed authority, that in Germany there has recently been a huge wave of national feeling expressing itself in demands for emphasis upon those subjects which would fill the minds of boys and girls with a sense of glory in the German past, of confidence in the German future, and with some contempt for Germany's enemies. These efforts are not restricted to domestic matters. We know that measures are being taken to extend the sphere of German influence, through the medium of education in Turkey, and the Balkans, and in Latin South America, not only by the government, but by the business men and by instructed public opinion.

This brief exposition of Germany's educational aims does not attempt or desire to deny the many and great achievements which can most justly be placed to their credit. The average German student was well taught even if the things he learned were not always a sober reflection of the truth; even if truth were held of less account than expediency. A multitude of talents may not inaccurately describe the German nation considered from the educational standpoint. A nation so organized and so instructed may, indeed, as all the world has learned, be either a mighty influence for good, or a strong and sinister implement of mischief. "Opinion in Germany," says a well-informed and credible writer, "from the cradle to the grave has been controlled and directed by the military, *Machtpolitik*, and the policy of ruthlessness in warfare is therefore unanimously advocated by soldiers and citizens, scientists and clergymen, merchants and Roman Catholic priests."

This is, in my belief, a fair statement of the effect of the principle of tyranny applied to educational methods and propaganda.

The principle of liberty acts far otherwise. This implies the desire and intention of those responsible for the teaching of the nation that the individual shall develop, morally or intellectually, from within; that by education he shall be given the power and enjoy the opportunity of self development, and learn the manner of self expression. Where Germany seeks to nurture in each child the gifts, and the measure

of those gifts in so far as they may be of direct service to the state, the system of liberty desires the fullest development of all the natural powers in order that in their own measure and stature they shall be available for the common good. And so by the German method instruction of the hard-and-fast kind extends to all branches of learning. I remember well only a month before the war, discussing with a distinguished German colleague, some aspects of English literature and some gifts and qualities of the men who had bequeathed to us the splendid heritage which is the chief glory shared by all who speak our common tongue. I was struck not only by the variety but also by the rapidity of the judgments expressed. When, for example, Galsworthy was mentioned there came a clear and crisp opinion, precise, uncompromising, devoid of qualification or of illustration. I wondered at the swift precision until a few minutes later we came to speak of Oscar Wilde. Now Wilde, with all his subtly interwoven virtues and defects, cannot be expressed in an epigram, or summarized and dismissed in a phrase. Yet in this case again I had to listen to a curt and neat and exact survey of Wilde's position among modern authors. I was lost in stupefaction but had the curiosity to ask if my adversary in this friendly debate had read much of Wilde's work. And quite frankly the confession was made that not one column of this author had been read. The opinions, to which I had listened with real interest, were, so I learned, those held in Germany, taught in her schools and humbly accepted as apt and accurate. Even in a matter so remote from any bureaucratic importance there was, so to speak, the official and authoritative opinion. Here as often before, the German people would seem to hold "herd" opinions upon many problems, and to express them in identical phrases. This little illuminating experience seemed to me to have its own, and a very real significance, and to contrast quite sharply with what would have happened if I had been discussing this matter with a fellow-countryman. He indeed might never have read Wilde, though probably he might have seen one of his most charming plays; if he had read Wilde he might not have thought it worth while to form an opinion about him as a writer of English prose; but it is quite certain that if he expressed an opinion, it would be his own opin-

ion whether right or wrong. "A small thing, but mine own," he might have said apologetically. Is this German system really educational? It is, I believe, a mistake to assume that the present highly organized, well-planned, systematic instruction in the German schools really educates the German people. It puts upon their minds too many ready-made opinions, disposes of them too easily to accept the judgments of experts on subjects with which they are not familiar; it departmentalizes German opinion and prevents the ordinary German citizen from forming his own judgments on the profoundest political and moral issues, while giving him an overflowing consciousness of excellence.

The system of liberty desires rather to develop and strengthen the character of the future citizen; the system of tyranny seeks to train and stamp the intellect with a certain quality. It is free natural growth on the one hand; it is repressive and specific culture on the other.

The one comment, or perhaps I may without injustice say the one unfavorable criticism that I have heard passed, in Germany and elsewhere, about our English system of education is that we place too much stress upon and indeed waste most precious and irreclaimable time upon the playing of games. In every English school much is made of this playing of team games. In my day, and I hope it is so still, more was thought by his school fellows of the athletic achievements of a boy than of his intellectual prowess in the schools. In the development of a boy's character along the lines which in my country most fathers wish their boys to go, the playing of games is the most powerful and salutary influence. The games are those in which a boy, who is by nature an egotist, learns that it is the right thing to play for his side. He learns that it is not individual success that counts, but victory for his team. Self is merged in the side for which he plays. And by degrees he learns another lesson more valuable still. It is that though quite rightly he may strive for victory it is not only victory that counts. He learns to play not for the goal, but for the game. He finds that it is a nobler thing to play cleanly than it is merely to win. And he finds, too, not only in his youth, but through all his life that the finest epitaph that any man can earn is this: "He played the game"—not, I beg you to notice, "He won the game" or that he achieved this or that

most coveted honor or distinction, but just simply that "He played the game."

Even in this war, I think, we have an illustration of this very point. Many new devices have come to the aid of all the armies, and such science as each nation possesses has been called in to aid the combatants. Is it not interesting that all the dirty dodges, the gas attacks, the liquid fire, the bombardment of open towns, the metamorphosis of neutral embassies into bacteriological laboratories, the unrestricted use of submarines, have all come from one side? And is it not interesting that so many of the real and honest devices, barrage fire, tanks, hand grenades have come from the other? It is satisfactory to know, however, that when the Allies are compelled to retaliate, as they did very tardily and regretfully, for example, in the matter of gas attacks, the morbid ingenuity of the German recoils upon himself very heavily. In these matters so far as we have had to make a rejoinder, the German is now surpassed both by the French and ourselves. It would as a piece of practical policy have paid the enemy better to have "played the game." The response may indeed be made that this notion of playing the game for what the game is worth is not enough, that victory and the fruits of victory are really the ends in view. But we as surgeons know better. We are at work in our profession for the sake of the task, not for the tribute that we exact for our services. Our delight and our recompense is in the good work we are able to do, not in any paltry or imperfect pecuniary recognition of our value. We practice in a profession not a trade, and life is the most splendid and the most arduous profession of all. The development of a man's character, which allows the fullest expression of a man's life is, therefore, the motive and the mark of all methods of liberal education. It is the "drawing out" of something from the man himself (for that is what education means) as contrasted with the something driven in by the usages of the method of tyranny. It is something added to the mere building up and shaping of a man's mind. There is a charming legend in one of the Apocryphal gospels. Some little children were sitting by the wayside playing, and making mud sparrows when the Holy Child passed that way and took the sparrows in His hands, warmed them in His bosom, breathed upon them and released them to fly into the

heavens. This should be the impulse of liberty, an influence carrying life and freedom and ecstasy with it. And what may we hope the qualities of a whole nation to be whose individual members are brought up in these ideals and by these methods? Let us hope that they are justice in administration, steadfastness, a spirit of tolerance, and moderation in victory.

And in the practice of our profession am I in error in thinking that I have noticed among those trained in the ideals of liberty a gentler approach to the individual patient, a more anxious consideration for his welfare, and a more tender sympathy and compassion for his suffering than is found among that people for whom technical skill counts more in public esteem than qualities of character?

We have then in this war, as I believe, these conflicting and contending systems: tyranny and liberty; autocracy and democracy; control and repression from without, growth from within. And I am deeply persuaded that an issue for the world of science almost as critical and as grave as any I have mentioned is at stake in our future. Tyranny long exercised must mean a restriction of the intellectual outlook, a fettering of our thoughts to customs and to ordinances that cramp our minds, an atrophy from long disuse of that quality of mental effort which makes for originality. Tyranny implies the negation of scientific progress though the unrestricted exercise of its formulae may range in orderly precision all the knowledge that others have acquired. Tyranny means at last intellectual sterility and death. How impossible it is for a nation held in the grip of tyranny to give its citizens intellectual freedom, great though its desire may be to do so! Progress in science must, first and last, depend upon the unrestrained freedom of exercise of all the faculties of the human mind. Of these imagination is perhaps the chief. Imagination is the mother of fact. Or, one may say, it is the scaffold upon which one stands to build the structure of truth. Imagination, as Keats tells us, may be compared to Adam's dream—he awoke and found it truth. It cannot surely live in the narrow restrictions and in the

dank and stifling air where the noxious weed of tyranny thrives. For, hamper it as you will, thought in the long run must have its way, which is the way of challenge and inquiry. Nor, I think, can any work of enduring value come in the absence of intellectual morality, the very existence of which is threatened by that surrender of truth to expediency of which I have spoken. And I believe that the history of Germany in the last forty years is the most convincing argument that can be brought in favor of this thesis. In all this period she has displayed amazing industry, ungrudging toil; she has organized and tabulated and made accessible to all peoples, the scientific work of every nation; she has indeed been the intellectual clearing-house of the world. It would be useless to belittle and impossible to deny her intellectual value to the world. The best of her is diligence. But her own original contributions to science are, I believe it to be beyond dispute, the slenderest of any of the great nations of the world. Tyranny is not a force to set ideas in motion. Under a system of tyranny intellectual salvation can only come from revolt. How else can we account for the eternal freshness of the Jewish mind, and for the splendid achievements of that race which, tyrannized by every power, has kept its own religion, and lived its own intellectual life, not by submission but by resistance to those who held its men in bondage? Was not "Pilgrim's Progress" the cry of an unfettered soul, and not of the body restrained by the bolts and bars of Bedford Gaol? And was it not in Patmos that St. John the Divine beheld the visions of the Apocalypse?

In this war, as I see it, we are fighting, therefore, for liberty. Of the two discordant systems of morals, one only must triumph and survive. If we compromise with that which we believe to be a principle of evil, a precursor of moral and intellectual death and dissolution, we are false to those who have given their most precious lives that truth might conquer at the last; but more than this, we are false to those who come after; we are shackling for generations to come the minds and the souls of men; we are failing in our plain duty to humanity.

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EDITORIALS**WORK!**

The obligations imposed upon the physician who is left at home during this war are many and varied. The following extract from *The Journal of the Michigan Medical Society* sets forth very clearly an important duty—an ever-present duty, but one which weighs with greater heaviness during the war:

"More than ever is it incumbent upon members to delve deeper in their medical readings, extend their investigations, compile their experiences and record the results attained. We must become greater producers and scientific investigation and research must receive greater concentrated thought with the end in view of continuing the development of medicine and surgery in order that the war period may witness advancement in every line of medical activity and stagnation or retrogression be not characteristic of the present period in medical history.

"In former periods of war the tendency has been toward the arrestment of scientific progress and development. The tendency was to discourage research and study with the result that it required years to reinstate that spirit of quest and progress. We should seek to avoid such a tendency during this war.

"To accomplish this every one at home must 'dig in,' read, experiment, observe, record and acquire the habit of intensified investigation. He must then publish his results and contribute his part to the literature. We urge a greater manifestation of the spirit of studious investigation and production."

AN UNFAIR ADVANTAGE.

It seems hard to believe that men could be found who would be willing to try to secure a strangle hold upon the practice of another man who has laid himself upon the altar of his country and who has answered the call of duty to go wherever ordered and stay however long may be required of him in doing his part in the world struggle for human liberty. But there are such men.

There has been a deal of moving. Some of it has been necessary and wise. Some of it has been "low down" and mean. It is of this latter we would write.

In a few communities it has been absolutely necessary to have physicians to replace those who have gone to the army medical service, for the very good reason that these communities would be without medical service unless new physicians should come in. In some instances, too, there are very good reasons, independent of any conditions brought about by the war, for changes of location. But the fellows we are talking about are the buzzards who would take advantage of the absence of a man whose patriotism and sense of duty have carried him to the front to do a man's part for his country. These creatures think they can seize hard grip on the practice of the man that has gone to be away for one, two, three or more years which can be hardened and fastened as the months go by and permanently established by the time when the war shall end. We hope and believe that they will fail in their pernicious designs. The man who has gone will surely be gladly welcomed when he comes back and the genuineness of the welcome will be convincingly shown by the return of all his old patients and a number of new patients, all of whom will delight to honor him.

If the moving fever strikes a doctor who is more than twenty-one and less than fifty-five, if he is physically fit and professionally equipped, let him apply to Surgeon General Gorgas. The Surgeon General can locate him where he can do something worth while.

MEDICAL PREPAREDNESS.

EVERY DOCTOR IN THE AGE IN THE CORPS

The substance of a recent announcement by the Council of National Defense is to the effect that the end desired in the way of Medical Preparedness at the present time is "Every Doctor in the Age of Corps.

The term "Doctor" in this case refers to graduated, licensed practitioners who are capable of being of service.

The phrase "In the Age" refers to those between 22 and 55 years of age.

The term "Corps" refers to the *Medical Officers Reserve Corps*.

The General Medical Board has recommended the creation of what is at present designated "The Medical Service Corps." It is to be composed of doctors who are eligible for the Medical Officers Reserve Corps except for: First, Over age. Second, Disqualifying physical defects Third, Essential community or institutional needs. If these recommendations are honored, there will be three distinct groups of doctors: First, Those in the Medical Officers' Reserve Corps. Second, Those in the Medical Service Corps. Third, Those not identified for service in any capacity.

The duties that members of the Medical Service Corps will be called upon to perform have not as yet been defined, nor have the details as to the plan of organization been announced.*

If every doctor who is qualified in every way for a commission in the Medical Officers' Reserve Corps applies for, and accepts such commission, he will have done that which he is now asked and urged to do. Even though he joins the Corps he will not be called into active duty unless he is needed.

Future developments will, of course, determine as to whether or not any given person is to be called into active service.

Medical Resources: A careful study has been made of the medical resources of Tennessee. A brief discussion of the matter will be found under the heading "The Medical Resources of Tennessee."

A review of the figures presented in the table "Medical Resources of Tennessee" attached will clearly show that a comparatively small number of counties in Tennessee have furnished their share of doctors, and that some of these few counties have done more than their share in supplying the needs of the present army in a medical way.

If every doctor in the age joins the Corps the needs of such communities can be properly taken care of. That is, the men most needed at home can be left at home. The army needs and the various community needs can be adjusted intelligently. There is no questioning the fact that this is the ideal condition of medical preparedness. Can the ideal condition be created voluntarily? What do you say about the program? Will you do your part?

The Government is depending upon the doctors of America to volunteer their professional services—that is to volunteer to do service as medical officers. Will the nation, of necessity, change said policy? Is the confidence thus reposed in the medical profession misplaced?

Many states have already furnished quite their share of the number of doctors required to take care of the medical needs of the *first* army. Regrettable, though it is, Tennessee is not one of these. Tennessee is rapidly coming to the front, however, and will doubtless soon be listed among the states which have done their share.

The Surgeon General does the assigning to duty after one joins the Corps. Every doctor whom you see in uniform has signed an application and an oath. You are asked to sign an application and present yourself to any examiner whom you prefer for examination. You will determine as to whether or not you will sign the oath after your commission comes.

Then to the direct question. What is your attitude in regard to the matter? You have doubtless been thinking it over for the eight months which have passed since war was declared. Are you in favor of the program: "Every Doctor in the Age of the Corps?"

The fathers and mothers of drafted men are anxious about your answer. Your fellows in the Corps; your fellows at home—in fact, the nation, is anxious to know your answer.

No man has been appointed anywhere to officially tell you where your duty lies. The nation is making the call. It applies to every man. It is your *business*, and your's alone to determine the question as to where your duty lies.

*The recommendations of the General Medical Board with regard to the creation of a medical service organization to be known as the Medical Service Corps have been honored by the Surgeons General of the Army, Navy and Public Health Service. The details of plans are being worked out. The State Committee will be advised as to these at an early date. It is suggested that Tennessee physicians who have been rejected for appointment in the Medical Officers' Reserve Corps, on physical grounds, notify the State Committee of such rejection at once. A copy of the letter from the Surgeon General notifying applicant of his rejection should be enclosed with this notification.

THE MEDICAL RESOURCES OF TENNESSEE.

The table herewith attached shows the number of doctors and the population per doctor in each county in Tennessee.

It also shows the number of doctors in each of the two groups designated A and B classified as follows:

Group A is composed of graduated, licensed practitioners, between the age of 22 and 55 without *obvious* defects which would disqualify them for the Medical Officers' Reserve Corps.

Group B is composed of doctors who are either over 55 years of age, or who have obvious physical defects which disqualify them for the Medical Officers' Reserve Corps, or who do not hold a diploma.

It also shows the per cent of group A doctors who had, up to January 5th, been recommended for commission in the Medical Reserve Corps.

Neither the question of professional ability nor the question of community needs have been considered in making this classification. It will, of course, be necessary to refine group A from time to time with these two questions in mind.

There is a total of 2,204 doctors in group A according to the basis of classification above set out. It is not to be concluded, however, that there are 2,204 doctors in Tennessee who come up to the physical and professional standards required for appointment in the Medical Reserve Corps.

There are probably 200 doctors included included in group A who have already applied for commissions in the M. R. C. and been rejected. We do not know who they are, as yet.

It is conservatively estimated that at least 40 per cent of this entire group are either physically or professionally not suited to army needs.

It would be an injustice to a man to classify him in B group, however, *until he has been rejected by the Surgeon General.*

Counting that 40 per cent of those listed in group A would for one cause or another be rejected for the M. O. R. C. there are only 1,322 doctors in Tennessee who are eligible for such appointment. This means that more than one of every three doctors in Tennessee who are actually physically and professionally prepared for service will be required to meet the medical needs of the first army of 3,000,000 men—to say nothing of future needs.

The matter of community needs has not been mentioned. A very large per cent of the doctors in group A do practice in rural communities, and, in fact, are the sole dependence of a large number of people for medical service. In many rural communities where there are two doctors, one is a very old man whose work is very limited.

There is one community in Tennessee at the present time in which there is not a single doctor within a radius of eight miles. There is another community in which it is ten miles to a doctor from a given point. Another in which 298 heads of families have petitioned the authorities to exempt the only doctor in that community from military service. He is in draft age.

So when group A is again drawn upon to take care of community needs—it reduces the number available for military service quite considerably.

The figures make very evident the fact that the *cities* and *towns* must furnish the greater percentage of doctors for military service.

It will be noted that there is an average of 750 people per doctor in Tennessee. It will also be noted that there is a wide variation in the ratio of doctor population in the various counties. For instance, there are 1863 people per doctor in Clay County, and only 573 people per doctor in Dyer County.

It will be seen that counties with good towns and fair roads often have twice the number of doctors in ratio to population than in more remote counties. Rutherford County has only 772 people per doctor. Cannon County which adjoins Rutherford County has 1353 people per doctor. The counties of Knox, Hamilton, Davidson and Shelby have a relatively high ratio of doctors. For instance, Davidson County can give 154 doctors for military service and leave behind a larger ratio of doctors in proportion to population than is found in Cannon County.

Two of the cities—Nashville and Memphis—have Medical Colleges which are required to run in order to replenish our doctor population and the full time of some, and most of the time of many of the doctors in these cities will be taken up in doing necessary teaching.

Too, the specialists who do almost entirely referred work are located as a rule in the cities. There is not a sufficiently large number of these, however, to markedly affect the ratio.

It might be mentioned that the city doctor, owing to the condition of congested population and hospital facilities, can do a relatively larger volume of work than a rural practitioner, which of course is true.

The matter of personal preference must be brushed aside in these considerations, and the two great needs: The *Community need* and the *Army need* be given consideration.

It is quite evident that counties with more than 1200 people per doctor cannot spare, without suffering, the same ratio of doctors for military service that can be spared from counties with a relatively larger medical population.

It will be noted that there are a number of counties in which there is a high percentage of group A doctors, and a low percentage recommended for appointment in the M. O. R. C. In other cases there is a low percentage of group A doctors and a high percentage recommended. But few counties have so far furnished any considerable number of their doctors, and some of the few counties have furnished a very large per cent. In fact, 337 of the men recommended to date are from 6 counties.

Only 12.1 per cent of all the A group doctors in Tennessee have so far been recommended for commissions in the M. R. C.

The solution of the problem which confronts the profession is "Every Doctor in the Age in the Corps," at least every doctor in the age should apply and be examined for appointment in the M. O. R. C., then it will be possible and practicable to take care of the medical needs of both the community and the army to the best advantage of both.

COUNTY	Population Estimated 1915 Census	Total number of Doctors	Population Per Doctor	Group A	Group B	No. Recom- mended for Commis- sions	Per Cent. Group A Recom- mended
Anderson -----	17,760	17	1,045	12	5	1	8.3
Bedford -----	22,667	23	986	17	6	4	23.5
Benton -----	12,750	8	1,594	3	5	1	33.3
Bledsoe -----	6,329	5	1,266	3	2	0	0.0
Blount -----	21,654	31	699	22	9	2	9.0
Bradley -----	16,639	21	792	15	6	2	13.3
Campbell -----	32,698	21	1,557	18	3	4	22.2
Cannon -----	10,825	8	1,363	3	5	0	0.0
Carroll -----	23,971	32	749	21	11	3	14.2
Cheatam -----	10,765	12	897	5	7	0	0.0
Chester -----	9,090	12	757	8	4	1	12.5
Claiborne -----	24,984	28	892	23	5	1	4.3
Clay -----	9,317	5	1,863	3	2	0	0.0
Cocke -----	19,530	25	781	18	7	4	22.2
Coffee -----	15,652	10	920	10	7	4	40.00
Crockett -----	16,186	15	1,079	11	4	1	9.0
Cumberland -----	9,862	6	1,643	5	1	1	20.0
Davidson -----	163,542	321	509	267	54	71	26.5

COUNTY	Population Estimated 1915 Census	Total number of Doctors	Population Per Doctor	Group A	Group B	No. Recom- mended for Commis- sions	Per Cent. Group A Recom- mended
Decatur	10,093	13	776	8	5	0	0.0
DeKalb	15,434	18	857	10	8	1	10.0
Dickson	20,651	24	866	19	5	1	5.2
Dyer	29,800	52	573	38	14	2	5.2
Fayette	30,550	29	1,054	23	6	5	21.7
Fentress	8,152	8	1,019	5	3	0	0.0
Franklin	20,544	24	856	18	6	3	16.6
Gibson	42,803	43	975	26	17	3	11.5
Giles	32,629	30	1,088	17	13	2	11.7
Grainger	13,888	13	1,068	9	4	3	33.3
Greene	31,339	28	1,119	22	6	5	22.7
Grundy	8,595	9	955	6	3	0	0.0
Hamblen	14,134	23	614	16	7	2	12.5
Hamilton	103,809	149	696	120	29	19	15.8
Hancock	10,778	5	2,155	4	1	0	0.0
Hardeman	23,028	34	677	25	9	4	16.0
Hardin	17,521	24	730	14	10	1	7.1
Hawkins	23,587	23	1,025	16	7	2	12.5
Haywood	26,290	23	1,143	18	5	4	22.2
Henderson	17,030	34	516	18	16	2	11.1
Henry	26,080	39	668	21	18	2	9.5
Hickman	16,610	14	1,186	10	4	2	20.0
Houston	6,224	10	623	6	4	0	0.0
Humphreys	14,175	16	886	8	8	0	0.0
Jackson	15,036	16	940	11	5	0	0.0
James	5,210	4	1,302	1	3	0	0.0
Jefferson	17,755	29	612	17	12	2	11.7
Knox	104,674	169	613	133	36	26	19.5
Lake	9,407	12	784	11	1	2	18.1
Lauderdale	21,105	33	659	24	9	2	8.3
Lawrence	18,710	21	890	20	1	4	20.0
Lewis	6,864	6	1,144	4	2	0	0.0
Lincoln	25,908	36	747	23	13	3	13.0
Loudon	15,075	16	942	10	6	1	10.0
McMinn	22,038	24	918	17	7	1	5.8
McNairy	16,355	13	1,258	8	5	0	0.0
Macon	15,443	12	1,286	6	6	0	0.0
Madison	40,951	47	871	32	15	9	28.1
Marion	19,631	17	1,154	12	5	3	25.0
Marshall	16,872	25	674	15	10	1	16.6
Maury	40,456	43	940	31	12	13	41.9*
Meigs	6,131	4	1,532	1	3	0	0.0
Monroe	21,839	20	1,092	12	8	0	0.0
Montgomery	33,672	23	1,464	15	8	3	20.0
Moore	4,800	5	960	2	3	1	50.
Morgan	12,442	9	1,383	8	1	1	12.5
Obion	30,821	48	643	34	14	7	20.5
Overton	17,172	13	1,321	5	8	0	0.0
Perry	8,821	14	630	10	4	2	20.
Pickett	5,087	3	1,695	2	1	0	0.0
Polk	15,569	18	864	16	2	0	0.0
Putnam	21,764	20	1,088	9	11	0	0.0
Rhea	15,984	16	988	12	4	0	0.0
Roane	22,923	33	695	21	12	2	9.5
Robertson	25,695	28	917	18	10	4	22.2
Rutherford	33,199	43	772	24	19	3	12.5
Scott	13,931	15	929	12	3	1	8.3
Sequatchie	4,662	5	932	2	3	0	0.0
Sevier	22,440	15	1,496	9	6	0	0.0
Shelby	211,418	429	493	375	54	101	26.9
Smith	18,548	30	615	18	12	1	3.5
Stewart	14,860	14	1,062	10	4	0	0.0
Sullivan	65,859	82	803	57	25	4	7.0
Sumner	25,621	29	883	17	12	4	23.5
Tipton	29,556	42	703	27	15	1	3.7
Trousdale	5,874	8	734	5	3	0	0.0
Unicoi	7,911	11	719	9	2	1	11.1
Union	11,414	15	760	12	3	2	16.6
Van Buren	2,784	2	1,392	0	2	0	0.0
Warren	16,598	19	874	14	5	1	7.1
Washington	32,322	45	718	27	18	5	18.5
Wayne	12,062	17	709	12	5	0	0.0

COUNTY	Population Estimated 1915 Census	Total number of Doctors	Population Per Doctor	Group A	Group B	No. Recom- mended for Commis- sions	Per Cent. Group A Recom- mended
Weakley -----	31,929	55	580	43	12	5	11.6
White -----	16,086	17	946	11	6	1	9.0
Williamson -----	24,213	26	931	14	12	3	21.4
Wilson -----	25,394	40	634	25	15	1	4.0
Total -----	2,271,379	3,028	750	2,204	824	384	17.4

*Maury County shows a higher per cent of A group doctors recommended for commissions than any county having any considerable number resident.

REPORTING OF ACCIDENTS FROM LOCAL ANESTHETICS.

To the Editor:

The Committee on Therapeutic Research of the Council of Pharmacy and Chemistry of the American Medical Association has undertaken a study of the accidents following the clinical use of local anesthetics, especially those following ordinary therapeutic doses. It is hoped that this study may lead to a better understanding of the cause of such accidents, and consequently to methods of avoiding them, or, at least, of treating them successfully when they occur.

It is becoming apparent that several of the local anesthetics, if not all of those in general use, are prone to cause death or symptoms of severe poisoning in a small percentage of those cases in which the dose used has been hitherto considered quite safe.

The infrequent occurrence of these accidents and their production by relatively small doses point to a peculiar hypersensitiveness on the part of those in whom the accidents occur. The data necessary for a study of these accidents are at present wholly insufficient, especially since the symptoms described in most of the cases are quite different from those commonly observed in animals even after the administration of toxic, but not fatal, doses.

Such accidents are seldom reported in detail in the medical literature, partly because physicians and dentists fear that they may be held to blame should they report them, partly, perhaps, because they have failed to appreciate the importance of the matter from the standpoint of the protection of the public.

It is evident that a broader view should prevail, and that physicians should be informed regarding the conditions under which such accidents occur in order that they may be avoid-

ed. It is also evident that the best protection against such unjust accusations, and the best means of preventing such accidents consist in the publication of careful detailed records when they have occurred, with the attending circumstances. These should be reported in the medical or dental journals when possible; but when, for any reason, this seems undesirable, a confidential report may be filed with Dr. R. A. Hatcher, 414 East Twenty-sixth Street, New York City, who has been appointed by the Committee to collect this information.

If desired, such reports will be considered strictly confidential so far as the name of the patient and that of the medical attendant are concerned and such information will be used solely as a means of studying the problem of toxicity of this class of agents, unless permission is given to use the name.

All available facts, both public and private, should be included in these reports, but the following data are especially to be desired in those cases in which more detailed reports cannot be made:

The age, sex, and general history of the patient should be given in as great detail as possible. The state of the nervous system appears to be of especial importance. The dosage employed should be stated as accurately as possible; also the concentration of the solution employed, the site of the injection (whether intramuscular, perineural or strictly subcutaneous), and whether applied to the mouth, nose, or other part of the body. The possibility of an injection having been made into a small vein during intramuscular injection or into the gums should be considered. In such cases the action begins almost at once, that is, within a few seconds.

The previous condition of the heart and respiration should be reported if possible; and, of course, the effects of the drug on the heart and respiration, as well as the duration of the

symptoms, should be recorded. If antidotes are employed, their nature and dosage should be stated, together with the character and time of appearance of the effects induced by the antidotes. It is important to state whether antidotes were administered orally, or by subcutaneous, intra-muscular or intravenous injection, and the concentration in which such antidotes were used.

While such detailed information, together with any other available data, are desirable, it is not to be understood that the inability to supply such details should prevent the publication of reports of poisoning, however meager the data, so long as accuracy is observed.

The committee urges on all anesthetists, surgeons, physicians and dentists the making of such reports as a public duty; it asks that they read this appeal with especial attention of the character of observation desired.

TORALD SOLLMAN, Chairman.

R. A. HATCHER, Special Referee.

Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association.

BEWARE OF SWINDLERS.

No doubt you may have seen the several notices, under "General News," in the Journal A. M. A., in several recent issues, entitled "Once more a warning." These refer to swindlers operating in different sections of the country,—various letters having been received from victims in Ohio, Colorado and other widely separated States. Now comes a letter from the well-known publishing house of W. B. Saunders Co. of Philadelphia, saying a man under the name of E. T. Rogers, claiming to represent the University Progressive Club of Cincinnati, for medical and other journals, has been victimizing physicians in Illinois; and the same subscription swindlers, or another under the name of Robert Wayne, has been relieving physicians of their well earned cash in the region of Gary, Ind. It is believed there is concerted action, perhaps by an organized band, being taken at this time of the year, to victimize physicians on so-called "subscription" schemes. Every physician should decline to pay any money by check, or otherwise, to sub-

scription agents not personally known to him, or for whom other physicians cannot vouch. Many of these so-called agents operate under the guise of students "working their way through college."

MEMOIRS.

A number of the members of the Association have died since the last annual meeting. The Committee on Memoirs will want to make a complete report to the House of Delegates and the Association will want to make all proper expression of respect in memory of deceased members. Each county society, therefore, should have a Committee on Memoirs whose duty shall be to draft suitable statements concerning the lives and work of their members who have died during the year and send them at once to the Secretary of the Association for transmission to the Committee on Memoirs.

The officers of all county societies are respectfully urged to give immediate attention to this important matter.

THE SECTION IN OPHTHALMOLOGY AND OTOLARYNGOLOGY.

The officers of the Section on Diseases of the Eye, Ear, Nose and Throat, of the Tennessee State Medical Association, desire to extend an invitation through the Journal to every member of the State Association who is interested in the line of work represented by this section to attend the meeting of the section on the second day of the annual meeting in Memphis. It is purposed this year to devote the morning hours of the session, beginning at nine o'clock, to the reading of papers, and it is expected that the program will contain representative contributions by capable clinicians in the lines which they represent. At one o'clock the members of the section will be the guests of the President of the Section, Dr. Richmond McKinney, of Memphis, at luncheon, which will be followed by the reading of one or two more papers, then adjournment to the Memphis General Hospital, where clinics will be conducted by several members of the Memphis Society of Ophthalmology and Oto-Laryngology. The meeting of the section this year doubtless will

be quite large, even though the demands of the war have taken so many members of the Association for military service. The Secretary of the section, Dr. W. W. Potter, Cherokee Building, Knoxville, would be pleased to receive titles of papers that members may wish to contribute to the program. Owing to the short time that will be available for the reading of papers, and the fact that the program sometimes is very crowded, prospective contributors are urged to bear in mind the importance of endeavoring to offer something in the way of original ideas, and to refrain as far as they consistently can from mere case reports. The work of the section has been unusually good in the past, and the officers are earnestly going to strive to continue this, and to help to place the scientific work of the section on a plane which will evoke favorable comparison with the work of the various state medical association sections on diseases of the eye, ear, nose and throat.

NAVY'S CALL FOR BINOCULARS, SPY-GLASSES AND TELESCOPES: "THE EYES OF THE NAVY."

Dear Sir:

The Navy is still in urgent need of binoculars, spy-glasses and telescopes. The use of the submarine has so changed naval warfare that ~~more~~ "EYES" are needed on every ship, in order that a constant and efficient lookout may be maintained. Sextants and chronometers are also urgently required.

Heretofore, the United States has been obliged to rely almost entirely upon foreign countries for its supply of such articles. These channels of supply are now closed, and as no stock is on hand in this country to meet the present emergency, it has become necessary to appeal to the patriotism of private owners, to furnish "EYES FOR THE NAVY."

Several weeks ago, an appeal was made through the daily press, resulting in the receipt of over 3,000 glasses of various kinds, the great majority of which has proven satisfactory for naval use. *This number, however, is wholly in*

sufficient, and the Navy needs many thousands more.

May I, therefore, ask your co-operation with the Navy, to impress upon your subscribers, either editorially, pictorially or in display, by announcing in addition to the above general statement, the following salient features in connection with the Navy's call:

All articles should be securely tagged giving the name and address of the donor, and forwarded by mail or express to the Hon. Franklin D. Roosevelt, Assistant Secretary of the Navy, care of Naval Observatory, Washington, D. C., so that they may be acknowledged by him.

Articles not suitable for naval use will be returned to the sender. Those accepted will be keyed, so that the name and address of the donor, will be permanently recorded at the Navy Department, and every effort will be made to return them, with added historic interest, at the termination of the war. It is, of course, impossible to guarantee them against damage or loss.

As the Government cannot, under the law, accept services or material without making some payment therefor, one dollar will be paid for each article accepted, which sum will constitute the rental price, or, in the event of loss, the purchase price, of such article.

Toward the end of January, it is proposed to distribute throughout the country, posters making an appeal to fill this want of the Navy.

As this is a matter which depends entirely for its success upon publicity, I very much hope that you will feel inclined to help the Navy at this time by assisting in any way that lies within your power.

Very sincerely yours,

FRANKLIN D. ROOSEVELT,
Assistant Secretary of the Navy.

The Editor,
Journal of the Tennessee State Medical Association,
Nashville, Tenn.

SOCIETY PROCEEDINGS

DICKSON COUNTY.

The Dickson County Medical Society has organized for 1918 with a record breaking membership. We are all interested and pulling together enthusiastically, having every reason to believe that the Society will do some really good work this year and that the individual members will be benefited by the scientific papers and discussions that will make up the program. The Society will meet on the first Tuesday in each month. Dr. W. W. Walker will be the essayist for the February meeting and Drs. Sugg and Hunt will discuss the subject presented—"Lobar and Lobular Pneumonia."

HARTWELL WEAVER, Secretary.

NOTES AND COMMENT

Dr. J. P. Tillery, Knoxville, has recovered after an operation for appendicitis and has been to Pas-a-Grille, Florida, for a short period of recreation.

The 1918 officers of the Knox County Medical Society are: Dr. Walter Luttrell, President; Dr. M. C. Wright, Vice President; Dr. W. N. Lynn, Secretary-Treasurer.

A "Hoover Dinner" was given by the officers of the Knox County Medical Society to the members on the evening of January 8th. The hit of the menu was a concoction which was called a "camouflage cocktail." According to our reporter, this mellowing draught produced strange results, producing speeches in some instances which destroyed camouflage in large chunks, while in others nothing but camouflage flowed out. The Knox County Medical Society is in good shape and one reason for this is to be found in the annual "get-together."

Dr. J. C. Overall, for some years at Lascassas, has gone to Murfreesboro where he will make his home in the future.

Dr. E. M. Holmes, Murfreesboro, has accepted a place as Assistant Superintendent of the Central Hospital for the Insane at Nashville.

The Cocke County Medical Society has reported ten members for 1918 through the Secretary, Dr. J. O. Woods. This is one of the youngest societies in the Association and is going to be a permanent and successful organization.

Lieut. L. T. Bolton, M. R. C., Lucy, has been assigned to duty at Camp McClellan, Anniston, Ala.

Lieut. Thos. W. Menees, M. R. C., Nashville, has been ordered to report for duty at Camp Sherman, Chillicothe, Ohio.

Capt. J. H. Marable, M. R. C., Cowan, has been assigned to duty at Camp Upton, Long Island.

Lieut. W. K. Vance, Jr., M. R. C., Bristol, is on duty at Ft. Sam Houston, Texas.

Lieut. Louis Levy, M. R. C., Memphis, has been assigned to duty with the Aviation Section, Signal Corps, at Portland, Oregon.

Lieut. R. M. Young, M. R. C., Knoxville, is at Camp Greenleaf, Ft. Oglethorpe, Ga.

Lieut. Robt. Pillow, Jr., M. R. C., Columbia, has been ordered to report at Ft. Oglethorpe for instruction.

Lieut. O. B. Moon, M. R. C., Bellbuckle, is on duty at Ft. Riley, Kansas.

Lieut. L. D. Hill, Jr., M. C. U. S. Army, has returned to Camp Sevier, after a visit of ten days to Mrs. Hill and little Miss Hill, who arrived on Christmas eve.

Lieut. B. T. Nolen, M. R. C., Franklin, is on duty at Camp Sevier, Greenville, S. C.

Lieut. S. L. Bocellato, M. R. C., Memphis, has been assigned to duty at Ft. Sam Houston, Texas.

Capt. W. F. Clary, M. R. C., Memphis, is at the training camp at Ft. Oglethorpe.

Lieut. P. D. Biddle, M. R. C., Columbia, has been ordered to Ft. Riley, Kas.

Lieut. S. L. Bacellato, M. R. C., Memphis, is at Ft. Riley for a course of instruction.

Lieut. P. H. Anderson, M. R. C., Memphis, has been given honorable discharge because of physical disqualification and has returned to Memphis.

Lieut. L. H. Chapman, M. R. C., Memphis, is at Ft. Riley for a course of instruction.

Lieut. A. B. Jones, Nashville, has been assigned to duty at Camp Meade, after having finished a course of instruction at the Army Medical School.

County Society reports for 1918 are coming in very slowly. Have you paid your dues?

Get ready for the Memphis meeting. It will be a good meeting if you will help make it so.

At a meeting for organization, held in Philadelphia in November, Dr. Richmond McKinney, of Memphis, and Dr. Eldred B. Cayce, of Nashville, were elected charter members of the Clinical Association of American Peroral Endoscopists. This association was organized for the purpose of aiding in the development of broncho-esophagoscopy technique and study, and its meetings are to be altogether clinical in nature. It is to be very limited in the number of its personnel, having only one representative from the various smaller cities, with a number limited in proportion from the larger centers. The first president elected was Dr. Chevalier Jackson, of Philadelphia, the dean of American peroral endoscopists.

The Chattanooga Academy of Medicine has arranged to pay the State Association dues of all members now in or who will later go into the Medical Reserve Corps.

Major J. T. Barbee, Jackson, has won his promotion, having entered the M. R. C. as a captain.

The Hardin County Medical Society, Dr. O. H. Williams, Secretary, has reported for 1918. This, one of the youngest of our county societies, shows a gain over last year and Dr. Williams says that a supplemental report showing yet more members will soon come in.

Don't forget to vaccinate the children. Small-pox is abroad in the land.

Annual dues are coming in slowly. Please see or write to your County Secretary and pay your dues so that your name can be reported.

"The State should protect the public health as it does the public peace."

A new wing is to be added to the Baptist Memorial Hospital at Memphis. The capacity of Memphis hospitals, already large, will be handsomely increased by this addition by which the Baptist Memorial will be enabled to double its service.

Extensive improvements will be made at the Central Hospital for the Insane, consisting of a new building for Negroes, two dining halls, an administration building and a tuberculosis hospital.

The officers of the Giles County Medical Society for 1918 are Dr. J. A. LaRue, Pulaski, President; Dr. Denman, Lynnville, Vice President; Dr. C. A. Abernathy, Pulaski, Secretary, and Dr. G. C. Grimes, Pulaski, Treasurer.

The Baird-Dulaney Hospital at Dyersburg has purchased the residence of the late Dr. I. S. Rawles, which will be remodeled and fitted for hospital service, to be used in addition to the present hospital.

Lieut. E. S. Seale, M. R. C., Nashville, is on duty at Camp Gordon, Atlanta, Ga.

Lieut. A. L. Lear, Sewanee, has been assigned to duty at Ft. Meyer, Va.

Lieut. P. E. McNabb, M. R. C., Knoxville, is serving at the Walter Reed Hospital, Takoma Park, D. C.

Lieut. E. M. Orr, M. R. C., Nashville, is on duty at Camp Sevier, Greenville, S. C.

Lieut. T. C. Chapman, M. R. C., Brownsville, is at Camp Greenleaf, Ft. Oglethorpe, Ga.

Lieut. D. C. Haggard, M. R. C., Unionville, is at the training camp for medical officers at Ft. Oglethorpe, Ga.

BOOK REVIEWS

THE SURGICAL CLINICS OF CHICAGO. Volume I, Number 6. Index number. Bi-monthly by W. B. Saunders Company, Philadelphia.

The list of contributors to this number of the Chicago Clinics contains the names of Drs. Dean Lewis, Kretschner, L. E. Schmidt, A. J. Ochsner, Bevan, Carl Davis, C. Henry Davis, Cary, Carl Beck, Besley, Kreuscher, Dyas, Eisendrath, and Speed. The subjects discussed are varied and of present interest to surgeons.

THE MEDICAL CLINICS OF NORTH AMERICA.

November, 1917. Bi-monthly by W. B. Saunders Company, Philadelphia.

This, the third number of this publication, is the best yet issued. "The Diet in Diseases of the Kidneys," by Max Einhorn; "The Typhoid Diet," by Warren Coleman; "Apparent and Real Appetite Defects in the Young," by Kerley; "Calories in Common Life," by Lusk, make up a group of discussions on subjects which the general run of physicians need to have presented to them. These contributions make this an uncommonly valuable publication, but they do not mark the limit of its value, for there are other splendid clinics, too. Rufus Cole on "The Treatment of Lobar Pneumonia," Libman on "Affections of the Valves of the Heart," Swift on "Rheumatic Fever," Palmer on "Acidosis—Diabetes Mellitus and Chronic Nephritis," and other noted men on subjects of great interest have contributed in a way to make this a very splendidly helpful number of the Clinics of North America.

INTERNATIONAL CLINICS. Volume IV. Twenty-Seventh Series. J. B. Lippincott Company, Philadelphia.

This is a very good number of the International Clinics, with a list of contributors from all parts of the United States, one from Switzerland and one from France. A clinic by Albee on "Military Bone Surgery," and one of G. G. Davis on orthopedic cases are of especial interest, as is the contribution of Cumston on "Injuries to the Cranium and Brain in Warfare," "A Study of Fifteen Cases

of Brain Tumor of Obscure Localization," by Beverly Tucker of Virginia, is a fine paper which carries much valuable instruction.

CODE OF ETHICS

Concluded from last month

ARTICLE II.

PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

Section 1. Physicians should not, as a general rule, undertake the treatment of themselves, nor of members of their family. In such circumstances they are peculiarly dependent on each other; therefore, kind offices and professional aid should always be cheerfully and gratuitously afforded. These visits ought not, however, to be obtrusively made, as they may give rise to embarrassment or interfere with that free choice on which confidence depends.

Sec. 2. All practicing physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near them.

Sec. 3. When a physician is summoned from a distance to the bedside of a colleague in easy financial circumstances, a compensation, proportionate to traveling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor, should be made by the patient or relatives.

Sec. 4. When more than one physician is attending another, one of the number should take charge of the case, otherwise the concert of thought and action so essential to wise treatment cannot be assured.

Sec. 5. The affairs of life, the pursuit of health, and the various acts and contingencies to which a physician is peculiarly exposed, sometimes require the temporary withdrawal of this physician from daily professional labor, and the appointment of a colleague to act for a specified time. The colleague's compliance is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician.

ARTICLE III.

THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATIONS.

Section 1. The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet the contingencies of disease or accident.

(Sec. 1-A. Interpretation of Sec. 1. Provided, however, that no consultation shall be held with physicians who designate their practice as based on any exclusive dogma or sectarian system of medicine.)

Sec. 2. Consultations should be promoted in difficult cases, as they contribute to confidence and more enlarged views of practice.

Sec. 3. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations, and this is generally practicable, for society has been so considerate as to allow the plea of a professional engagement to take precedence of all others.

Sec. 4. As professional engagements may sometimes cause delay in attendance, the physician who first arrives should wait for a reasonable time, after which the consultation should be considered as postponed to a new appointment.

Sec. 5. In consultation no insincerity, rivalry, or envy should be indulged in; candor, probity, and all due respect should be observed toward the physician in charge of the case.

Sec. 6. No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered which were not the result of previous deliberation and concurrence.

Sec. 7. No decision should restrain the attending physician from making such subsequent variations in the mode of treatment as any unexpected change in the character of the case may demand. But at the next consultation reasons for the variations should be stated. The same privilege, with its obligation, belongs to the consultant when sent for in an emergency during the absence of the family physician.

Sec. 8. The attending physician, at any time, may prescribe for the patient; not so the consultant, when alone, except in a case of emergency, or when called from a considerable distance. In the first instance, the consultant should do what is needed, and in the second, should do no more than make an examination of the patient, and leave a written opinion, under seal, to be delivered to the attending physician.

Sec. 9. All discussions in consultations should be held as confidential. Neither by words nor by manner should any of the participants in a consultation assert or intimate that any part of the treatment pursued did not receive his assent.

Sec. 10. It may happen that two physicians cannot agree in their views of the nature of a case and of the treatment to be pursued. In the event of such disagreement a third physician should, if practicable, be called in. None but the rarest and most exceptional circumstances would justify the consultant in taking charge of the case. He should not do so merely on the solicitation of the patient or friends.

Sec. 11. A physician who is called in consultation should observe the most honorable and scrupulous regard for the character and standing of the

attending physician, whose conduct of the case should be justified, as far as can be, consistently with the conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in the attending physician.

ARTICLE IV.

DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

Section 1. Medicine being a liberal profession, those admitted to its ranks should found their expectations of practice especially on the character and extent of their medical education.

Sec. 2. The Physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder, nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

Sec. 3. The same circumspection should be observed when, from motives of business or friendship, a physician is prompted to visit a person who is under the direction of another physician. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

Sec. 4. A physician ought not to take charge of, or prescribe for, a patient who has recently been under the care of another physician, in the same illness, except in the case of a sudden emergency, or in consultation with the physician previously in attendance, or when that physician has relinquished the case or has been dismissed in due form.

Sec. 5. The physician acting in conformity with the preceding section should not make damaging insinuations regarding the practice previously adopted, and, indeed, should justify it if consistent with truth and probity; for it often happens that patients become dissatisfied when they are not immediately relieved, and, as many diseases are naturally protracted, the seeming want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

Sec. 6. When a physician is called to an urgent case, because the family physician is not at hand, unless assistance in consultation is desired, the former should resign the care of the patient immediately on the arrival of the family physician.

Sec. 7. It often happens, in cases of sudden illness, and of accidents and injuries, owing to the alarm and anxiety of friends, that several physicians are simultaneously summoned. Under these circumstances, courtesy should assign the patient to the first who arrives and who, if necessary, may invoke the aid of some of those present. In such a

case, however, the acting physician should request that the family physician be called, and should withdraw unless requested to continue in attendance.

Sec. 8. Whenever a physician is called to the patient of another physician during the enforced absence of that physician, the case should be relinquished on the return of the latter.

Sec. 4. A physician, while visiting a sick person in the country, may be asked to see another physician's patient because of a sudden aggravation of the disease. On such an occasion the immediate needs of the patient should be attended to and the case relinquished on the arrival of the attending physician.

Sec. 10. When a physician who has been engaged to attend an obstetric case is absent, and another is sent for, delivery being accomplished during the vicarious attendance, the acting physician is entitled to the professional fee, but must resign the patient on the arrival of the physician first engaged.

ARTICLE V.

DIFFERENCES BETWEEN PHYSICIANS.

Section 1. Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such unfortunate cases occur and cannot be immediately adjusted, they should be referred to the arbitration of a sufficient number of impartial physicians.

Sec. 2. A peculiar reserve must be maintained by professional questions, and as there exist many points in physicians toward the public in regard to some pro-medical ethics and etiquette through which the feelings of physicians may be painfully assailed in their intercourse, and which cannot be understood or appreciated by general society, neither the subject-matter of their differences nor the adjudication of the arbitrators should be made public.

ARTICLE VI.

COMPENSATION.

Section 1. By the members of no profession are eleemosynary services more liberally dispensed than by the medical, but justice requires that some limits should be placed on their performance. Poverty, mutual professional obligations, and certain of the public duties named in Sections 1 and 2, of Chapter III, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or the rich, or by societies for mutual benefit, for life insurance, or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege.

Sec. 2. It cannot be justly expected of physicians to furnish certificates of inability to serve on juries, or to perform military duty; to testify to the state

of health of persons wishing to insure their lives, obtain pensions, or the like, without due compensation. But to persons in indigent circumstances such services should always be cheerfully and freely accorded.

Sec. 3. Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgement from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

Sec. 4. It is derogatory to professional character for physicians to pay or offer to pay commissions to any person whatsoever who may recommend to them patients requiring general or special treatment or surgical operations. It is equally derogatory to professional character for physicians to solicit or to receive such commissions.

CHAPTER III.

THE DUTIES OF THE PROFESSION TO THE PUBLIC.

Section 1. As good citizens it is the duty of physicians to be very vigilant for the welfare of the community, and to bear their part in sustaining its laws, institutions, and burdens; especially should they be ready to co-operate with the proper authorities in the administration and the observance of sanitary laws and regulations, and they should also ever be ready to give counsel to the public in relation to subjects especially appertaining to their profession, as on questions of sanitary police, public hygiene, and legal medicine.

Sec. 2. It is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions; in regard to measures for the prevention of epidemics and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering people, even at the risk of their own lives.

Sec. 3. Physicians, when called on by legally constituted authorities, should always be ready to enlighten inquests and courts of justice on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison or other violent means, and various other subjects embraced in the science of medical jurisprudence. It is but just, however, for them to expect due compensation for their services.

Sec. 4. It is the duty of physicians who are frequent witnesses of the great wrongs committed by charlatans, and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects and to make known the injuries sustained by the unwary from the devices and pretensions of artful impostors.

Sec. 5. It is the duty of physicians to recognize and by legitimate patronage to promote the profession of pharmacy, on the skill and proficiency of which depends the reliability of remedies; but any pharmacist who, although educated in his own profession, is not a qualified physician, and who assumes to prescribe for the sick, ought not to receive such countenance and support. Any druggist or pharmacist who dispenses deteriorated or sophisticated drugs, or who substitutes one remedy for another designated in a prescription, ought thereby to forfeit the recognition and influence of physicians.

MISCELLANEOUS

AMERICAN VERONAL.

In the Trading with the Enemy Act recently passed by Congress, provision was made for the licensing of American manufacturers by the Federal Trade Commission to produce articles and substances patented in this country by enemy aliens. Already a number of chemical manufacturers have taken advantage of this provision, among them The Abbott Laboratories of Chicago, which has applied for and secured a license for the manufacture of Veronal, which, however, will be known hereafter by the name Barbital. This is the official name given it by the Federal Trade Commission, and this name must be used as the principal title by every firm manufacturing it under license from our government.

The Abbott Laboratories have already begun the manufacture of Barbital (formerly known as Veronal), and we understand that in short time it expects to have an abundant supply of this well known hypnotic, and that it will be made generally available through the trade. The quality of the product is guaranteed. Indeed, before a license is granted for the manufacture of any of these patented synthetics in the United States, the product must be submitted to rigid investigation at the hands of a chemist designated by the Federal Trade Commission. In this way Americans are assured of supplies of the American-made products at reasonable prices, and the manufacture of fine American chemicals is given the stimulus which it requires.

Those interested are urged to communicate with The Abbott Laboratories, Chicago.

FLIERS AT THE FRONT ARE BADLY HANDICAPPED.

By FRANK A. VANDERLIP.

Hardly a day passes but there is some fresh illustration of the inability on the part of governments to buy with money something essential for war preparation. We are now discovering that there is not linen enough in the world to cover the aeroplanes that the allies are producing. The English government has just decided that at least 10,000 acres of English soil must be devoted to the production of flax, instead of food. That government is making terms with the farmers, which will lead to the planting of that crop.

The illustrations are endless of the fact that there are not labor and materials enough to produce the things that the people want and the things that the government wants. There are two ways of helping solve the problem. One is to speed up production and industry. The other is to cut down unnecessary consumption. By the latter method every one can put himself in an effective way in a front trench. Every one can make sacrifices that will be reflected in a quicker and better equipment of armies. The progress that can be made by speeding up production can be exceeded many fold by the effect which can be produced by a whole nation making up its mind really to help the war. The difficulties of equipping the army would be easily cut in half if every individual in this country would recognize his responsibility in helping to equip the army, his responsibility to get on without demanding new things he can get on without, and by so doing leave a greater amount of labor and material to produce the things the government must have.

Every yard of linen that is bought from today on puts the buyer in direct competition with the Aeroplane Board in equipping the fleet of aeroplanes which we hope to put over the German lines. That should be very plain to every one when it is known that the need of linen for aeroplane production exceeds the total stock there is in the world. But the same rule applies in almost every direction that we turn.

There can be only two reasons why men

During Infancy and Childhood it is important but difficult to keep the bowels in order. It can be done by the continued use of

Liquid Petrolatum Squibb Heavy (Californian)

It is pure and safe, tasteless and odorless. Because it is neither a laxative, a cathartic, nor a purgative, but a perfect mechanical lubricant, is not absorbed by the system and does not disturb digestion, it may be given indefinitely in any necessary quantity. Thus it prevents intestinal toxæmia, restores normal action of the bowels, and aids in maintaining normal nutrition. Especially valuable for young patients during the summer and autumn months.

To be had at all drug stores in original one-pint packages under the Squibb label and guaranty.

LIQUID PETROLATUM SQUIBB, Heavy (Californian) is refined under our control and solely for us only by the Standard Oil Co. of California, which has no connection with any other Standard Oil Co.

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Manufacturing Chemists to the Medical Profession since 1858

should not see in their personal expenditure their individual responsibility for equipping the army. One is a belief that a fully equipped American army is not going to be necessary; that the war either will be won by our allies, or it has already been won by the exhaustion of our enemies. There is little in the situation upon which to base such a belief. The other reason must be that people believe that there are labor and materials enough to produce everything that they want for their individual uses and everything that the government must have. Absolute blindness to what the total is when you add two and two is the only excuse there can be for believing there are labor and material enough for the individual comforts and military needs of the country. The man who is not prepared to economize today either believes there is no necessity for military preparedness or he will not look in the face the plainest facts in regard to industrial capacity. The government has provided the easiest possible road for the individual to turn his personal sacrifice into patriotic aid—save and buy War Savings Stamps.

NEW AND NON-OFFICIAL REMEDIES.

Chicago, Jan. 29, 1918.

Dr. Olin West, Sec'y.,

Jour. Tenn. State Med. Assn.,

Nashville, Tenn.

Dear Doctor:

During January the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

The Abbott Laboratories—Chlorazene Surgical Powder.

Calco Chemical Company — Betanaphthyl Salicylate (Calco).

Merck and Company—Acetyl Salicylic Acid-

Merck.

Yours truly,

W. A. PUCKNER, *Secretary*. . .

Council on Pharmacy and Chemistry.

Wap:Ek.

The so-called fractional method of gastric analysis advocated by Rehfuess has been found to have such advantages that it has been introduced in the Battle Creek Sanitarium, where test meals to the number of thousands are given each year. To the patients, the new plan is vastly preferable. Indeed, the swallowing of what was often called "the garden hose" was attended in most cases by actual suffering and in many by severe pain. Under the fractional method, a very small tube is used. An oval tip, made of metal and perforated, makes the swallowing easy. Of course, it is inconvenient to have to sit for an hour and a half or two hours without removing the tube, but there is no real distress. The usual test meal of two slices of toast and a glass of water is given, at intervals of half an hour, a small specimen of the gastric juice, 10 or 16 C. C. is taken, until the acidity curve begins definitely to come down.

Under the old method, the practice was to take out all the gastric juice at the end of an hour. At Battle Creek, the period had been lengthened to an hour and a quarter because this was found to be the usual time of greatest acidity. A comparison of the two methods shows that the original plan was misleading in many instances. Under the procedure, cases would be set down as normal if the acidity was shown to be at the usual percentage one hour after the meal. However, as the fractional method proves, many patients who have the right acidity at that minute, many have far too right acidity at that minute, many have far too little or too much, before and after the hour has passed. By studying the complete cycle of digestion, an accurate diagnosis may be made.

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THE TREATMENT OF CHRONIC PARENCHYMATOUS NEPHRITIS.*

E. R. ZEMP, M. D.,
Knoxville.

Analogy sometimes leads us far a-field in the treatment of disease and this is particularly well demonstrated in the treatment of nephritis. Sugar and albumin both might suggest kidney disease to the laity, but what medical man would be guilty of such an error? And yet we find in the orthodox treatment of nephritis, suggestions that indicate that even the profession is not entirely free from the effects of this circumstantial evidence. We diet patients to make their urine sugar-free, and we diet them to make their urine albumen-free. We attach the same therapeutic importance to the one as we do the other, but there is a wonderful difference between the two. In glycosuria there is an excess of sugar in the blood, but there is no excess of albumen in albuminuria, and while the cause of the latter is a kidney lesion, the cause of the former is far removed from the kidney. To say that a nephritic must eat no albuminous food because we prohibit the eating of carbohydrates by diabetics is faulty reasoning and very prone to work harm. Leibig's simple conception of the digestion and assimilation of protein food is no longer tenable. The protein molecule must be broken down into its constituent groups before it is absorbed, hence it is difficult to see how diet can influence albuminuria one way or the other.

In fact, the compiling of the way in which the chronic nephritic is treated by the average

practitioner would make a sad commentary on our knowledge of this subject, for obsessed with the idea that the disease is incurable, which it is, we are influenced by defeat from the start, hence we do not study these cases as closely as we might and dismiss them with a few platitudinous instructions. Unfortunately, I have nothing new to offer, nothing that will decrease the mortality, only a few ideas that may add to the patient's comfort and longevity, based on a close study of this subject for the past few years. That the general practitioner neglects this class of patients there can be no doubt, for where results are so slowly manifested, interest flags and the patient, restless under his affliction, seeks aid from charlatan to theurgist.

If we knew the cause of nephritis we could perhaps treat it more successfully, but the cause is often undiscovered and the patient's history contains nothing that can be actually accused of the sin. The cause may be very remote and the development so insidious that the disease is far advanced before it is discovered. If we knew the cause we could sometimes prevent it, and prophylaxis is the ideal form of treatment. We do know that it frequently follows in the wake of syphilis, tuberculosis and malaria; that cold and dampness invite it, and that focal infections of all kinds are often responsible for its appearance. Alcohol and its running mate, mercury, have both been adjudged guilty, while lead and arsenic are looked upon with strong suspicion. That it frequently follows pregnancy and the infectious diseases, especially scarlet fever, is a well-known fact. Nephritis may follow the presence of a toxemia regardless of its kind. If acting suddenly and severely, it causes acute nephritis. If its action is milder and over a long period of time, it produces the chronic type. Many acute cases final-

*Read before Knox County Medical Society, January 22, 1918.

ly drift into a chronic form.

With such an array of etiological factors the outlook for successful prophylactic measures is rather discouraging. All forms of focal infections should be removed. Syphilis and malaria should be promptly and vigorously treated. All forms of infectious diseases should be regarded seriously, and the pregnant woman should be closely watched. The alcoholic, the butcher, the baker and the candle-stick-maker should each be advised of his danger and the gonococci taught that his disease is a little worse than a bad cold. To much emphasis cannot be placed upon the importance of examining the urine of every patient that comes under our care, for very often here is the first signal of distress. Can we ever educate the public up to the point of having physical examinations made at stated periods? If so, we can reduce the mortality of all diseases and especially those whose onset is insidious.

Prophylaxis consists in educating the people to right living and restoring their old time faith in the physician—by being worthy of such a faith! Then will fake kidney-cures vanish from the land and newspapers and magazines will make an honest living. Then will disappear the idea that for every disease there must be a drug to cure it, and superstition will be superseded by practical knowledge of the laws of hygiene and disease. Nephritis cannot be influenced by drugs, but some of its most distressing symptoms yield to the sane administration of simple remedies. The acute type is curable, but soon or late the chronic type proves fatal.

Patients suffering from chronic nephritis are subject to acute exacerbations, due to exposure to cold, infections, diet, and overexertion, any one of which may prove fatal, so life can at least be prolonged by instructing them how to live and teaching them to be temperate in all things. A warm climate and warm clothing, plenty of fresh air, selected diet and moderate exercise, work together to bring about the best results. In approaching the treatment of any disease the one dominating thought should be the removal of the cause. Unfortunately this cannot always be done, but where a cause is discernible, its prompt removal should be our aim. Beyond this, the treatment is more or less symptomatic. Mild cases require the same watchful care as do severe cases. I wish to em-

phasize the statement of Rowntree in regard to the functional picture; that in some cases the excretory power of the kidney is very little disturbed except in regard to water and salt. Functional injury of the kidney is not always proportional to the severity of the disease. That functional studies underestimate rather than overestimate the injury. Functional tests are of more value prognostically than diagnostically.

The first therapeutic indication in the early stage, and all acute exacerbations, is *rest*. This means that the patient must go to bed between blankets and stay there until all red blood cells and kidney epithelium have disappeared from the urine. Even then he should be kept there a week or two longer. This not only rests the body and hence cuts down metabolistic products to be eliminated, but it takes off the strenuous effect of vasomotor system and heart to a certain degree, and lessens the congestion of the kidney. After this period a moderate amount of exercise should be encouraged but fatigue is always to be avoided. That the heart is always secondarily affected in this disease should be kept in mind. The anemia so often seen in these patients no doubt is caused to a large extent by the toxemia, but some of it can be most surely accounted for by the "atmosphere" in which these patients live—no exercise, devitalized air and restricted diet. Albuminuria does not necessarily call for the bed and blankets, but marked edema and acute uremia always demand it. Unfortunately, many patients suffer with such marked dyspnoea that they cannot go to bed at once. Their chairs should be made as comfortable as possible, they should be clad in warm under-garments and surrounded with blankets. There is a wonderfully close relation between the skin and the kidneys and this relation should at all times be encountered along the lines of helpfulness in nephritis.

Perhaps the most important factor in the successful treatment of chronic nephritis, is the regulation of the DIET. Not only is it the most important, but it is the most difficult. Whole volumes could be written on the subject and yet the reader would find himself perplexed and confused. The whole subject may be summed up in the one word INDIVIDUALIZE, for here lies the secret of success. Patients differ widely in their whims, fancies and

capacities. Their appetites are fickle and capricious and it is these conditions that we have to meet. To make the anorexic eat and the hyperorexic refrain from eating are minor troubles compared to some of the physiological problems that present themselves. A nephritic should Hooverize surely, but not beyond the point of efficiency. Many of these patients owe their early death to the fact that they have been starved, for in a long continued restricted diet we have a potent means of accomplishing their demise. We are inclined to treat the kidney instead of the patient, forgetting von Noorden's rule that in acute affections we concentrate our attention on the diseased organ, whilst in chronic cases we keep the general condition of the patient more in view. So in chronic nephritis it is a mistake to keep the patient on a severely restricted diet, as we do in acute cases, for the disease is so prolonged that such a diet can only result in detriment. A diet consisting largely of carbohydrates and fats should be selected, but enough protein should be added to meet the physiological needs.

Chittenden has shown that weight and nitrogenous equilibrium can be kept up on about 60 grammes of protein a day. Von Noorden finds that the chronic nephritic can easily excrete the nitrogen from about 90 grammes of protein a day, but above this, elimination becomes irregular. Chittenden's physiological minimum is for normal men, so we have to add to this minimum the amount of albumin lost in the urine. This for the average case is about 6 grammes. The exact amount can be determined by the albuminometer. Thus we see that the maximum amount of protein chronic nephritics should be allowed, is 90 grammes, and the minimum is about 60 grammes plus the amount of albumen in the urine. This protein can be given in the form of meat and eggs, remembering that in a quart of milk we have about 35 grammes of protein. Meat extracts and cellular organs should be avoided as they contain a large proportion of purins, useless for nutrition and difficult of excretion. We desire to attain the greatest degree of physiological rest for the kidney.

It is in the treatment of chronic nephritis that a knowledge of the caloric needs of the patient, and the caloric value of foods, are most useful. These patients should be fed up to their full caloric requirements and this can readily be

done by the use of fats and carbohydrates which impose no work on the kidney at all, or at least very little. The end products of metabolized fats and carbohydrates are CO_2 and H_2O . These are largely eliminated by the lungs and skin, leaving but little work for the kidney. But it must be remembered that proteins are the building stones of the body, without which it cannot keep itself in repair, hence absolutely necessary for its upkeep and welfare.

Some authorities advocate the milk diet as an easy route for the celestial exit of this class of patients. At least that is the result of their advice. Milk alone is not suitable for this class of patients. It is too bulky. It gets very monotonous and causes anorexia, constipation, or diarrhoea. One would have to drink about four quarts daily to get the necessary number of calories and this amount contains 140 grammes of protein. Besides, this excess of fluid would have to be eliminated largely by the kidneys, resulting in exhaustion, and manifested by edema and toxemia. Milk to the amount of a quart per day is to be recommended, but amounts over this are harmful. In fact, the total amount of fluid that a nephritic takes should be carefully regulated to meet the permeability of the kidneys. Where they excrete fluids readily and without fatigue, water can be given freely, but otherwise, fluids should be given as best meets the individual case—with watchful caution.

Previously, we have been led astray in the dieting of nephritis by two factors: the amount of albumin in the urine and the amount of urea excretion. The amount of albumin in the urine gives no clue as to the seriousness of the disease as there is no relation between the amount of albumin excreted and the amounts of water, urea and total nitrogen. The findings of albumin in the urine indicates two things clearly—that the patient has nephritis (I am speaking now of chronics only) and that he needs added to his physiological minimum of protein an amount equal to the amount of albumen found in his urine.

In regard to the urea, it is apparent that an estimation of the urea in the urine is valueless unless the diet of the patient is taken into consideration, for we can increase or diminish it at will, by simply increasing or diminishing the protein in the diet. If the patient eats an excess

of protein, it is immediately changed into urea and eliminated, but if little protein is eaten, but little will be found in the urine. The fact that a nephritic can turn his protein into urea means that he is not dead, and little else, for the formation of urea is a property of all living cells. A small amount of urea in the urine may simply mean that the patient is taking but a small quantity of protein food. So the estimation of urea in the urine without the knowledge of the total nitrogen excreted is but of little value.

Fruits of all kinds are not only permitted, but they are generally relished by the patient so they should be added freely to the diet. I generally put my patients upon a diet of cereals, fruit and milk at first, and then as they improve, I add simple vegetables and a regulated quantity of meat and eggs. Quantity is almost as important as quality. The patient should never eat a large meal, but the day's portion should be divided into about four meals. During the very acute exacerbations I limit them to von Noorden's diet of sugar, fruit and water for a week or ten days, then as they improve, I gradually return them to the above mentioned diet.

Whether salt should be withheld from a nephritic's diet, is a subject that is still debatable. We know that many nephritics excrete salt very poorly and that their edema is associated with salt retention. In fact, the classical experiment of Widal and Javal shows that the weight of their patient from water retention could be varied at will by increasing or decreasing the salt in his diet. When edema is present, salt should be withheld, according to the vast majority of authorities, but the patient should not be kept too long on a salt-free diet. After the edema disappears, the salt in milk and bread is sufficient and hence, we need not add it to the food. Fisher's ideas concerning edema are revolutionary and are far from being accepted as true. In some cases the administration of salt and sodium carbonate works beautifully, in others it makes the edema worse. I believe it is best employed where there is acidosis. Von Furth and Hosslin believe that salt retention is due to a disturbance of the renal function caused by altered circulatory relations and not to the historetention from altered tissues.

Edema and toxemia make up a large part of the picture of chronic diffuse nephritis, on account of the frequent exacerbations. Their

treatment is practically the same and they are generally associated together. A patient with marked edema should be in bed between blankets and on the sugar and fruit diet. He should have water in limited quantities only, from one to three pints daily. He should be at rest physically and physiologically. The indications for treatment are rest for the kidney and elimination. We can never force a kidney under these circumstances to act. It must be coached. The picture we have now, is a patient markedly edematous, dyspnoeic and drowsy. His distress at times is very great and he may be swollen beyond recognition. The kidneys are excreting about half a pint of urine daily, and the first thought is to give diuretics and make them act more freely. Such a procedure is disastrous and the impotence of drugs is well demonstrated. All drugs which act on the kidney itself are contraindicated, hence all diuretics, except the salines, and these do not act on the kidney, but increase the osmotic pressure of the blood. The caffeine group of drugs stimulate the renal epithelium directly and may stop the excretion of urine entirely. They sometimes cause hematuria. In the use of digitalis, we are led astray by analogy. Where there is suppression of urine from stagnation of the circulation, as in broken compensation, digitalis is a sovereign drug, but the conditions in nephritis are entirely different. We are prone to think of digitalis as a diuretic, regardless of the pathological condition, hence, when we desire to increase diuresis, we use it regardless of the cause. True, when compensation is broken in nephritis, this drug gives us good results, but otherwise it is not only disappointing, but even dangerous. Under conditions generally found in chronic nephritis, it is unwise to use stimulating diuretics, or those which increasing the blood pressure elsewhere in the body cause more blood to flow through the kidney. Saline diuretics are not so objectionable. They increase the osmotic pressure of the blood, causing a hydremia. This in turn is followed by increased elimination of urine in some cases, with the least possible damage to the kidney.

By far, the better plan is to therapeutically ignore the kidney and turn our attention to the skin and bowels. Sweating and purging are well recognized means of relieving the kidneys of some of its work. Which of the two is bet-

ter, depends upon the object desired. Sweating is of but little value in uremia, for Tachau has shown that sweating causes but an insignificant loss of nitrogen, but the loss of sodium chloride may reach 2 grammes per hour. Only about 3 grammes of nitrogen can be eliminated by the skin a day, while nearly three times that much can be eliminated more easily by the bowel. Sweating is very depressing and sometimes causes alarming symptoms in the weak. Purgation is much less so and can be kept up indefinitely, if not too severe.

Purgation is the best way to rid the body of retained toxins and water when the kidney is crippled, but sweating is valuable in edema on account of the elimination of sodium chloride as well as water. They both may be judiciously combined, but it should be remembered that sweating removes water without a corresponding removal of toxins, hence the object desired, rest of the kidney, may be defeated by serving it with urine more highly concentrated. The methods of sweating are too well known to be described. A few words in regard to purgation: He who attempts to purge his patient "according to Hoyle" and get satisfactory results, is doomed to disappointment. Such a simple thing would seem to call for no advice, but so often have I been chagrined at the poor results, after warning the patient to look out for a regular flood, that I believe others have had similar experiences. To simply give a "dose of salts" and await results, may be poetical, but it is not practical. The purgative must be regulated according to the clinical condition of the patient. If he is very weak and exhausted, with failing circulation, then purgation must be moderate. If he is fairly robust, with good circulation, purgation can be severe. Most writers leave a great deal to one's imagination when dealing with doses. Perhaps this is due to the fact that potent drugs are not fool-proof, and they try to play safe at least. A nephritic can be killed by purgation, or sweating, if either is used without judgment. The physician must be acquainted with the general condition of his patient and especially with the condition of his circulatory apparatus. I am in the habit of giving 1-2 ounces of magnesium sulphate every morning when the edema and dyspnoea are marked and symptoms of toxemia are present. How long to keep this up depends upon results. The idea

is to get five or six, or more, watery actions from each dose. The salts should be given in just enough hot water to dissolve them. Then in an hour, follow with a glass of hot water. The effect is generally satisfactory. In frail people the dose can be reduced proportionately. At other times I give one-half ounce of this drug every two hours until two ounces are taken. But patients tire of salts and in others it acts not so well, producing nausea and vomiting, so other purgatives must be tried. Compound jalap powder is a faithful friend in these trying times. A teaspoonful can be given every two hours until effect, but it is more apt to produce nausea. The king of all hydrogogues, however, is ELETERIN. As a rule, its action is painless, but it does cause some nausea and the patient feels rather wretchedly until its action is over. It begins to act in three or four hours and the amount of fluid obtained from the bowel amounts to two quarts or more. The dose is 1-10 grain and it should be combined with belladonna, or hyoscyamus, to prevent griping. I do not use this "vegetable trocar" more than three times a week, and only then when edema is severe, but it may be kept up for weeks if the patient's general condition is fair and the edema persists. However, as the edema subsides, I discontinue the eleterin and use the pil. cathartic. vegetabilis. Two of these at bed time give several watery actions without any discomfort. Sometimes when the eleterin did not act and was inclined to lie in the patient's bowel and produce nausea, one of these C. C. pills brought the desired result readily and bountifully.

When things are going favorably, under purgation the edema and dyspnoea gradually subside and the toxemia gets less, then we lessen the medication accordingly. As to the amount of purgation required, each patient is a law unto himself. It should not be kept up any longer than is necessary for it interferes with nutrition. Its good effects are manifested in the lessened edema, the disappearance of dyspnoea, the return of natural sleep, the opening up of the kidneys, and the return of the patient to his bed where he probably has not been for several weeks. The appetite is improved and digestion along with it, and the patient begins to gain in strength and is able to walk around again. He

takes a new lease on life and sings the praises of his benefactor.

In acute exacerbations of chronic nephritis dyspnoea is sometimes a very distressing symptom and requires immediate attention. There is nothing that gives so quick relief as a hypodermic of morphine and atrophine, and in usual doses it does not interfere with excretory power of the kidney. Strychnine and atrophine sometimes have just as good an effect, and when the blood pressure is not high, adrenalin acts magically, and seems to have no bad effects. The dyspnoea is due to the edema and the toxemia, so eventually purgation will relieve it. One of the first signs of improvement is generally seen in the breathing, closely followed by an increased urinary excretion.

If the edema is very severe and persistent, incisions, or Southey tubes can be used, but great care must be taken against infection. Surgical cleanliness should prevail. Anemia is always present, due to lack of food, lack of exercise, lack of fresh air and the toxemia. Out of doors exercise for those who can take it daily in warm weather. Warm baths keep the skin functioning and lessens congestions. Warm clothes all the year round. For those financially able, warm climate. The administration of iron in nephritis has been greatly abused. Tyson long ago called attention to the fact that dosing patients with large amounts of iron was injurious. Only a small amount of the dose given can be absorbed, while the excess causes headache, constipation, loss of appetite and indigestion—just about everything you do not want to cause. Some mild preparation, such as Basham's mixture, in two to four dram doses, does everything that any preparation of iron can do, sets well on the stomach and is pleasing to eye and taste. But iron plays a minor part as compared to good food, fresh air and proper exercise and clothing.

There are two complications that arise during the course of chronic parenchymatous nephritis that are not only very alarming, but may prove quickly fatal. These are convulsions and edema of the glottis or lungs. The first is to be treated by hastening elimination in all ways possible. Not only sweating and purging, but blood-letting should be used. This latter procedure is sometimes life saving, as diuresis has

been known to start up anew after performing it. If the convulsions persist, morphine hypodermically is indicated, or chloral and bromides may be administered per rectum. For edema of the lungs, the same eliminative treatment with morphine and atrophine hypodermically, and brisk stimulation of the circulation. For edema of the glottis, scarification or even tracheotomy in severe cases, but cold to the neck should be tried first. Steam inhalations are sometimes of great benefit.

Patients generally die from toxemia, exhaustion, cardiac complications, or some intercurrent disease. Their weakened condition makes them an easy prey to all kinds of infections and we should ever be on the lookout for complications of this nature. That much can be done for the comfort and benefit of chronic nephritics is true, but eventually the vast majority of them succumb directly, or indirectly, to their disease. We should not abandon them to their fate without an honest effort to prolong their lives and they should receive at all times our careful and sympathetic attention. If we can relieve them only of some of their discomforts, we will have well spent our time. They are as a rule a grateful and appreciative class of patients, and that is more than we can say of some curables. In these cases, as in all medical cases, the golden rule is. "Be a watchman all the time but only a therapist as occasion demands."

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TUBERCULOSIS OF THE BLADDER.

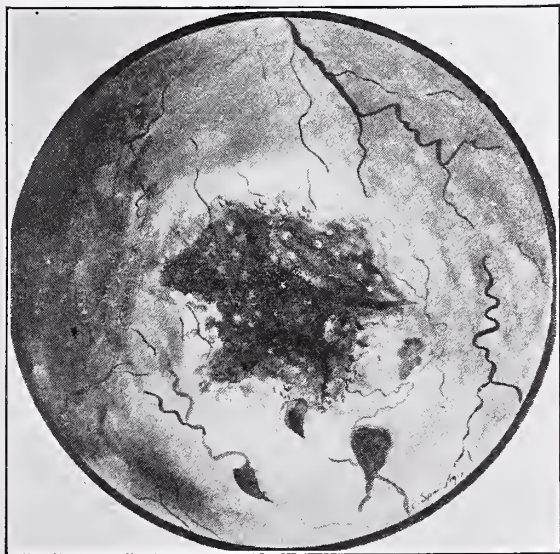
By PERRY BROMBERG, M. D., F. A. C. S.,
Nashville.

The extreme difficulty frequently attending the early recognition of tuberculosis of the bladder is no exception to the well recognized difficulties of its early diagnosis elsewhere in the body, for the reason that, in its very early stages, it may produce relatively no symptoms, and the organic changes be impossible of demonstration. Certainly, in no other region is its recognition more important.

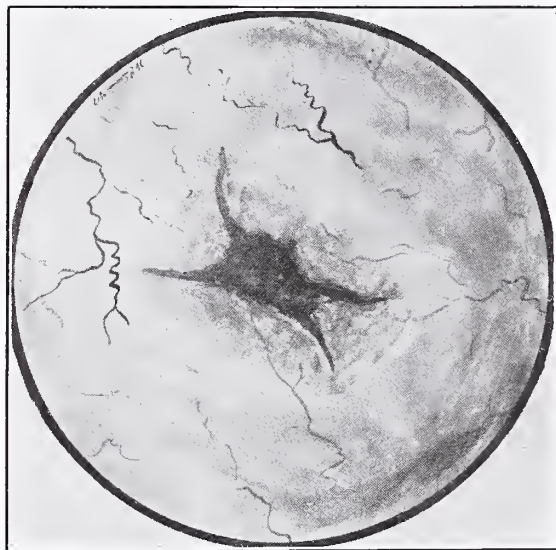
It is assuredly safe to say that the condition often escapes recognition for a period of from two to six years. Realizing the truth of this statement led to an analysis of the cases of which I have records, and I regret to say that in the vast majority tuberculosis was not even suspected by the physician in charge. Not only is this true, but the treatment to which these sufferers had been subjected before the true nature of the disease was discovered was, in several instances, about the worst that could be imagined. I

various headings, for comparison with the findings of others, as well as for the purpose of more definitely fixing a symptom grouping applicable to all.

I do not know that I could, with any degree of scientific accuracy, claim genital tuberculosis to be on the increase, but surely it is not an uncommon complication. The marked tendency of present day writers to dissociate genito-urinary tuberculosis into renal, vesical, of the testicle, of



Tuberculous Ulceration of Ureter Orifice.



Tuberculous Ulceration of Ureter Orifice 6 Weeks After Nephrectomy.

believe that most urologists will agree that this is too often true, and, if so, they surely admit the necessity for a more general study of this disease upon the part of the general practitioner, into whose hands the large majority of these cases first come.

For the purpose of clearer elucidation, I have carefully tabulated my recorded cases under

the epididymis, etc., and to discuss them as independent diseases has, I think, been an error, as tuberculosis of the bladder may be said to be rarely, if ever, a primary infection. Personally, I believe it to be always secondary, and, in the vast majority of instances, secondary to involvement of the kidney. Unquestionably, in the large majority of cases, the kidney is first involved, the bladder becoming secondarily involved by descending infection. Walker found in a series of 279 cases that the kidney was the first part of the urinary tract to be involved in 184, the epididymis in 80, prostate and fallopian tubes in 6, seminal vesicles in 2, and the uterus in 1.

"It is very rare for the bladder to be the only part of the tract to be involved in the infection." Should the disease reach the bladder from below, it follows the epididymis, vas, seminal vesicle, prostate, posterior urethra and bladder, the testicle frequently escaping. In descending infections from the kidney, bladder tuberculosis

may occur, either through the blood or by infected urine from the ureter.

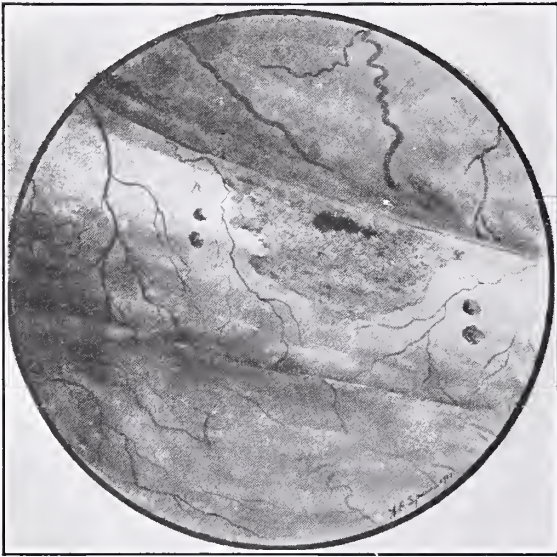
Time nor space would permit digression to discuss the very interesting possibilities of whether the infection first reaches the kidney from the bladder, or *vice versa*, in the cases of tuberculosis which involve the epididymis, prostate or seminal vesicles. Recent experimental work, however, seems to prove very conclusively

able) if either the posterior urethra, prostate, seminal vesicles, vas and epididymis were also the seat of disease.

In my experience, I have never seen a case of renal tuberculosis secondary to bladder involvement, but believe that bladder tuberculosis is practically always secondary to kidney involvement, or from extension by continuity of tissue from below.

The next factor of special importance to the individual so affected is whether the renal involvement is unilateral or bilateral. "Halle and Motz found in 131 cases of renal and ureteral tuberculosis, examined by them, post-mortem, that the tuberculous lesions were confined to one side in 89 and were bilateral in 42. In 30 of the cases the opposite kidneys and ureters were absolutely normal; in 17 others they were the seat of pathological processes of one or another sort, but *not tuberculous*."

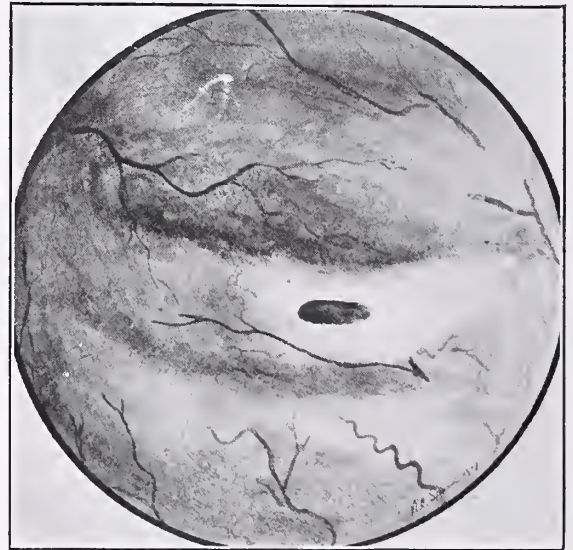
It is the generally accepted consensus of opinion that in from 60 to 80 per cent of the cases examined the tuberculous focus will be found to be unilateral. Certainly, my experience shows even a larger percentage.



Tuberculous Ulceration of Ureter Orifice.

that a backward flow into the ureters of infected urine may be occasioned by any obstruction below interfering with the free passage of urine. Filling the bladder with thorium solution, and having the patient strain against an obstructed urethra, will show, by radiogram, the thorium ascending upward in the ureter to varying heights, depending on the degree of obstruction, even ascending to the kidney pelvis. This would indicate that ascending infections of the kidney might occur if infected urine were forced backward in cases complicated by stricture, prostate, etc., where the infection was primarily from below.

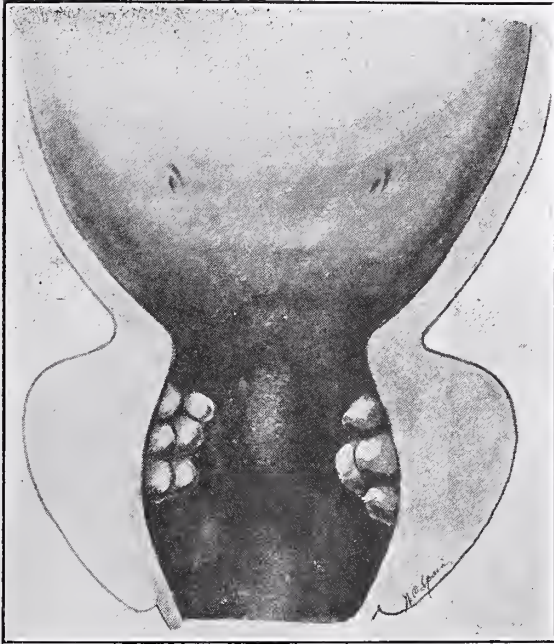
It is extremely important to the welfare of the patient that we know with what type of infection we are dealing. It is self-evident that where one kidney is involved, and the bladder secondarily, by descending infection, that cure may only be obtained (so far as the bladder is concerned) by removal of the kidney; while it would be the very height of folly to remove a kidney secondarily involved by ascending infection from the bladder (granting this to be prob-



Normal Ureter (Right).

In fact, I can only recall one case (II) in which both kidneys were involved, and this one also suffered from pulmonary tuberculosis, lupus and Addison's disease, in fact, showing a general miliary tuberculosis of skin, lungs, kidneys and adrenals. I do not doubt that, frequently, both kidneys are involved, one to a much less degree than the other, and, in which, tubercu-

losis, though existing, has not sufficiently developed to be made out clinically. It is also perfectly possible that in the process of destruction and loss of function on the part of one, extra work is thrown upon the other and it develops sufficient resistance to overcome the infection. I have taken the liberty to digress from my subject to the kidney, for the reason that in so large a majority of bladder tuberculosis kidney pathology must be recognized and dealt with, if we expect results from treatment. Besides, it is the bladder symptoms which usually bring the kid-



Urethral Bodies—Usual Location.

ney cases to us, and, while I am well aware that kidney tuberculosis may exist and often does exist without bladder involvement, still I am compelled to believe that, sooner or later, the bladder, from some intercurrent infection, such as gonorrhoea, or trauma from instrumentation, or congestion from any of the various causes, will succumb and inevitably become infected. It is in my opinion only a matter of time. While it is true that Posner only found 12 cases of bladder tuberculosis in 115 cases of the disease in the kidney, it is equally true that Israel finds 11 in 23, and that Gautier found 35 in 51 cases. My series shows the kidney to be involved in all but 4 cases.

In reviewing the cases, which I have tabulated, you will observe that it occurs in middle life,

the youngest case in my series being 19, the oldest 58. Nine cases occurred between the 20th and 30th years, 11 cases between the 30th and 40th years, 4 cases between the 40th and 50th years, and 1 case between the 50th and 60th years. I have seen no case past 58. Case 8, in the boy 19, had existed for 15 months, and his symptoms probably began at a much earlier period. My series also shows a remarkable preponderance of males over females—16 males to 9 females—though most writers have found that the disease affects both sexes about equally. Walker, in his series of 382 cases, found 182 males and 204 females.

The social state does not appear to have any influence, as I find it about as common amongst the unmarried as the married, nor can I say that associated heredity has played any material part. Occasionally a case may present itself with such a history, but, when we study the series, we feel strongly inclined to disregard it as of extremely minor importance.

Casper and many other writers call attention to the noticeable frequency with which bladder



Cystoscopic Appearance of the Urethral Bodies.

tuberculosis follows upon gonorrhoeal infection. Having this in mind, I have carefully inquired into the history particularly and must say that I do not believe it is of any material importance as a predisposing factor. The enormous prevalence of gonorrhoea would naturally include it frequently in the history, but I think it should be considered a factor *only* when it occurs after kidney or pulmonary symptoms have been noted.

Take, for example, a patient who has had definite hematuria a year ago, with a slight increase in frequency; the development of an acute gonorrhoea may, and I believe does, favor the development of tuberculosis in the bladder and posterior urethra, but, if the same man had a gonorrhoea twenty years before and no complication remains, the previous infection should not be regarded as of consequence.

While it is no doubt true that other infections play an important role in favoring the development of tuberculosis in the bladder, one must be struck by the absence of other organisms. To such an extent is this true that, in the absence of other bacteria, where we are unable to get cultures from the bladder or kidney specimens, we are warned to strongly suspect tuberculosis. It is unquestionably true that the bladder is very resistant to the tuberculous infection, and, although experimental evidence shows that injury or previous infections favor the development, still, clinically, we are often unable to find evidence of either injury or other infection preceding the tuberculosis.

Situation—As already indicated, the location of the tuberculous process will depend upon the source from which the infection is received. If from the kidney, the corresponding ureter and portion of the trigone, in a line directly beneath the ureter mouth, will first show the establishment of the process within the bladder. Frequently, however, these cases are seen late and the entire trigone, both ureters, and perhaps the lateral bladder walls will have become invaded. Occasionally, the process will develop in the vesical neck and deep urethra, giving rise (early) to the development of small bodies just within the internal sphincter or external, in the deep urethra. These bodies may occasionally be seen with the urethroscope, or with the cystoscope, drawn well down into the urethra. "These bodies vary considerably in size, are of a pearly white, rarely red, color, and minute blood vessels can be seen traversing their smooth, unbroken surfaces. At an early stage, these are apparently solid masses of tissue that later seem to undergo a cystic change. In this cystic stage, they are easily ruptured, and a whitish substance exudes. When ruptured, they leave an abraded reddish surface, usually circular in outline, with a small shred of white tissue attached to the edge. Such areas

may be the only evidences of urethral trouble, and should excite suspicion."

In those cases secondary to pulmonary tuberculosis, or to an infection elsewhere, in which the bladder has been infected by the blood, then the tubercles are developed beneath the mucous membrane, causing the small sago grain bodies underneath. These frequently blend with one another, giving rise to the conglomerate tubercle described by Zuckerkandl. In these localities, there is often considerable hyperplasia of the mucous membrane, which may develop to such a degree as to be readily mistaken for papilloma. I have seen this condition in two cases, in which the mucous membrane appeared to be studied with small papillomatous bodies. This variety will be seen in those cases which present themselves for hematuria of sudden origin. It is, of course, understood that they may occur anywhere within the bladder, but most often on the base of the bladder. The trigone and ureter orifices will be most frequently affected in the type secondary to kidney involvement.

In my series of 25 cases herewith presented the pathology occupied the trigone and the orifice of the right ureter in 10, the left ureter in 7, and was diffuse in 4, the deep urethra showing definite evidence in 4. I have often encountered ulcers which bled freely but have never observed one deep enough to cause fear of perforation of the bladder wall, though Walker reports a few which have perforated.

Symptoms and Diagnosis.

It will be observed in the table which I have made that I have classified the symptoms, and I shall take the liberty to discuss them separately in the order in which I have tabulated them.

Increased frequency—I shall emphasize that a normal individual should urinate five times within twenty-four hours, and should pass approximately 10 oz. at each urination. Under varying physiological conditions the number of urinations may be increased, as well as the amount at each urination. I shall also assume that, in health, nocturnal urination should not occur, therefore, under this heading, I have placed all cases presenting an increase in frequency, either diurnal or nocturnal. It will be seen that in 100 per cent. or in all cases, this symptom was present to a greater or less degree. Five cases urinated every few minutes by day

and ten to twenty times by night; one case was compelled to wear a urinal both day and night on account of this symptom. Nine cases urinated every few minutes during the day and ten or more times at night only during attacks—during the remissions much less frequently. Ten cases only had to rise from two to six times at night and eight to ten times by day. In all cases, this symptom, or hematuria, has been the cause for which relief has been sought. In not a single instance has the diagnosis been established where frequency, strangury, or vesical tenesmus, or hematuria, was absent. A very interesting observation on Case 19, relative to this symptom was as to the effect of pregnancy. She became pregnant after her colpo-cystotomy, and, during the entire nine months was relatively free of bladder symptoms and her urine was clear and free of pus. Within a day or so after the birth of her baby, her symptoms returned with increased fury and persisted until her death.

Location and character of pain—While it is true that pain and vesical tenesmus are conspicuous symptoms of bladder tuberculosis, we should not be unmindful that these symptoms may be entirely absent, as in Cases 3 and 6. We should also remember that kidney involvement alone, without bladder pathology, may be responsible. The amount and character of pain will usually be found to bear a rather definite relationship to the location of the pathology. If in the bladder neck, the pain is rather severe, is more or less constant, and is referred to the penis, and, especially, to the fossa navicularis. It is as a rule of the terminal type. If the ulcers are located higher in the trigone, or on the vesical walls, the pain is usually much modified and may be more than a bladder irritability. I would especially urge that, in those cases so prone to be classed as neurotics in which bladder irritability is the only symptom, a most careful search be made for evidence of tuberculosis. I have under observation at the present time just such a case—an attorney, who finds it difficult to plead a lawsuit because of bladder irritability, who has on several occasions soiled his clothing from sheer inability to control the desire. He shows no pathology in his bladder or urethra, and has a perfectly normal urine. I fear that he will at some later date develop a recognizable tuberculosis. In my experience, those

cases presenting well marked tuberculous cystitis complain of intense vesical tenesmus with an almost constant desire to void, while in those cases in which the bladder wall is involved, though cystitis is not a marked feature, irritability and not severe tenesmus will be the distinguishing features.

Again referring to the chart, we observe the relationship between pain and bladder distension. Here I have attempted to only chart the greatest amount of pain. Many of these sufferers complain of pain before, during and after micturition, but I have attempted to draw them out as to the time when they experience the greatest amount of pain. It will be seen that 11 cases in the series have pain greatest when the bladder is full, 7 on completion of the act of urination, which often lasts until the next urination, and the others suffered before, during and after so much that they were unable to distinguish.

Remissions—Another rather constant feature, being absent in only 2 cases, was periods of freedom from pain. These remissions usually are of short duration when the disease is fairly well developed, and are longer in the very early cases. When fully developed and cystitis becomes a marked feature, they are absent. The longest period I have noted was in Case 19, already mentioned, nine months. Case I had several very definite periods, during which she claims to have been free from symptoms, within the year.

Many writers stress this symptom as very suggestive and characteristic of tuberculosis. My observation would bear this out.

Pyuria—Pus in the urine was present in 20 of the cases herewith recorded. Its presence in so large a number is no doubt due to the frequency of the accompanying pyelitis, and to the late period in which the cases were seen. When pus and mucus, which so frequently accompany an alkaline urine, occur, bladder epithelia will also be found and, together, make up the rather large amount of sediment usually found in these cases. It also indicates that the necrosis has reached the surface of the mucous membrane, and that cystitis is developed. It is in fact no longer a case of tuberculous bladder, but rather a case of tuberculous cystitis. Other organisms may be found in greater or less numbers, but the tubercle bacillus will often be

found alone. It is this fact, coupled with the apparent difficulty sometimes encountered in finding the tubercle bacillus, that explains the negative report returned from the laboratory. Above all, it is well to remember that cystitis does not exist without pus, and that pus does not occur without bacteria—therefore, should the report be negative, it should suffice to arouse one's suspicion of tuberculosis. We have often been told that in this disease the amount of pus is necessarily large and that the urine is usually alkaline. Casper states that "although it is acid in the majority of cases of cystitis, in tuberculous cystitis it rarely possesses this property."

I cannot agree with either of the above statements. My experience shows pus present in 80 per cent., but the amount of pus was not always large, nor was the urine alkaline in but two of the cases. One (Case 12) was accompanied by stricture, and had a mixed infection; the other (Case 16) was also a mixed infection and the bladder was markedly trabeculated. Keys lays stress upon the persistence of acidity in the face of the odor and foul muco-pus so characteristic of alkaline cystitis, and says it is one of the most characteristic signs of the disease.

Hematuria—Blood in the urine was found in 24 of the 25 cases herewith recorded. It was the first symptom to attract the attention of 3 of the cases (9-15-25).

In Case 9 a few drops of blood were noted after urination five months before I saw him. A few days later he noticed that his urine was bloody and this bleeding continued for a week. He consulted a physician in Houston, Texas, who gave him "some medicine internally." His bleeding ceased, to return again six weeks later. This attack was not very profuse, but was persistent for three weeks and suddenly disappeared. A few months later, a return of this symptom, with slightly increased frequency, caused him to come to Nashville and consult his physicians, Drs. Wilson and Harris, who referred him to me. Cystoscopy showed a definitely tuberculous area around the left ureter, with blood from the left kidney, both bladder and kidney specimens loaded with tubercle bacilli. Cases 15 and 25 were similar,

except they also gave rather definite histories of attacks of renal colic and suffered more from bladder tenesmus. These cases are mentioned more in detail for the purpose of illustrating the nature of the bleeding.

It is quite true that acute and profuse hemorrhages are not the rule in tuberculosis of the bladder. This may, however, be the case in tuberculosis of the kidney, which is, as I have already stressed, so frequently the forerunner of bladder tuberculosis, and was so in the three cases cited above. The hematuria of tuberculosis may be said to have these characteristics: It is not influenced by rest, as in stone, nor usually is it so free as in neoplasms. It is most often terminal, and is accompanied nearly always by a certain degree of vesical tenesmus or irritability. It is to be found in varying amounts, constantly present, either enough to be macroscopically noted by the patient, or to be found by the physician microscopically. It occurs by night as well as by day and, as a rule, will be materially increased upon attempts at instrumentation.

The above characteristics, together with the constancy of bleeding, are more indicative of tuberculosis than of any other disease of the bladder.

Tubercle bacilli—In determining the cause of a persistent cystitis we naturally rely upon the laboratory for much valuable assistance, and, in this particular disease, the special characteristics of the laboratory worker upon whom we rely should be known. It is not sufficient to merely centrifuge a small amount of urine, spread a drop upon a slide, glance hurriedly over it, and pronounce it negative. The search for tubercle bacilli should be thorough, complete and, above all, painstaking. It may require the examination of many slides and of many specimens, but the careful worker will be rewarded by finding them, while the slovenly one will not. The presence of tubercle bacilli in the urine, while indicative, is not always absolute evidence of urogenital tuberculosis. Beer, in the American Journal of Medical Science for August, 1917, particularly stresses the fact that tubercle bacilli may be eliminated through the kidneys from a focus elsewhere. He quotes from numerous investigators, who

show that tubercle bacilluria is not uncommon in pulmonary tuberculosis or in infections elsewhere in the body, provided the kidney is impaired.

Of striking interest in this connection is the work of "Kielleuthner, who studied only males with phthisis. In 13 such cases, with albumen free urine, with complete genito-urinary macroscopic and microscopic autopsies, all inoculation tests were negative. In 11 similar cases, with albumen in the urine, and non-tuberculous urogenital tract, three inoculation tests were positive. From these series he concludes that the tubercle bacilli do not pass normal kidneys, but that when the kidneys are impaired, as evidenced by slight albumenuria, the bacilli may pass and an excretory tubercle bacilluria develop."

This work is of extreme importance in deciding upon nephrectomy for a unilateral tuberculosis, when bacilli are found in the urine from the opposite kidney, but I do not regard it of such extremely important significance in determining the nature of a chronic cystitis. Under no circumstances should a careful study of the clinical symptoms and history be sidetracked by a possible tubercle bacilluria, but their presence, if accompanied by other evidence, should be accepted as final. In the series it will be observed that tubercle bacilli were present in all. This is explained by the fact that I have not included in this series any case in which the bacilli were not demonstrated. It also shows that persistence and care in the examinations will frequently find them. In several of the cases numerous examinations were made and, often, by two or more workers. In all cases upon whom nephrectomy was done operative findings confirmed the pre-operative diagnosis. I deem it unnecessary to discuss the possibility of confusing the tubercle bacillus and the smegma bacillus, presuming, of course, that due care will always be taken in securing the specimens.

Duration of symptoms when seen—In only two cases were the symptoms of short duration—1 four weeks and 1 six weeks; 3 had suffered for six months; 1 for nine months; 5 for one year; 7 for two years; 2 for three years; 2 for five years; 1 for six years; 1 for eight years and 1 for ten years.

Both of the early cases came to determine the cause of bleeding, which in both instances was macroscopic in quantity. It is really amazing how long symptoms may exist, upon which good presumptive evidence may be based of an existing tuberculosis, without more deterioration of the general health. Of course, in the well established cases, with an existing cystitis and damaged kidneys, the general condition is characteristically that of a debilitated individual, whose general appearance would immediately suggest tuberculosis, but, on the other hand, it is not uncommon to see cases which have existed for two or more years who appear robust and healthy, and in whom one would, from their general appearance, hesitate to suspect tuberculosis.

Cystoscopic findings—On discussing the location of the pathology, I have already mentioned my findings, both by cystoscope and urethroscope. They differ in no sense from the characteristic descriptions given by all observers. I desire at this point, however, to call attention to a condition which I have observed in two cases of my series, and in several cases that I have cystoscoped for others, which I regard as rather typical of tuberculosis. It is a bullous edema, either generally distributed over the trigone or confined to the ureter orifice. These small translucent vesicles are studded over the walls of the bladder and may completely hide the ureteric opening from view. They appear cystoscopically like a pemphigus appears upon the skin, and, as before stated, are quite typical of tuberculosis. I have not observed this condition in other chronic types of cystitis.

The ulceration encountered has never been deep, and, as before stated, in my experience has never given rise to the fear of perforation. Inflammatory areas, thick and inflamed mucosa, occasionally a small bleeding surface or an ecchymotic spot are all encountered, and, while to the trained observer these have some definite significance, they are by no means diagnostic and may occur in other types of cystitis.

I present herewith a few drawings, which are copies of actual intravesical photographs taken by several different authors, illustrating the cystoscopic appearance of the ureters in early and advanced cases. Drawing No. 1 is rather an exaggerated open ureter mouth, fissured and

held open by the intense inflammation in the immediate vicinity. Below it you will observe four rather distinct points of deep congestion, which show a marked tendency towards ulceration, laterally a diffuse inflammation with marked engorgement of the blood vessels. Drawing No. 2 is from an actual photograph of the same bladder six weeks after nephrectomy.

Drawing No. 3 is a rather typical picture of a tuberculous ulceration of the ureter orifice seen fairly early. (Note the ecchymotic areas and the dilated blood vessels.) Drawing No. 4 shows a normal ureter on the right.

Urethroscopic findings—I regret very much that a careful urethroscopy was not made in all of my cases. The urethra was examined in those cases complaining of much pain in the penis, and in two cases a deeply engorged posterior urethra appearing (from the close proximity of the light) much enlarged were the sago grain bodies identical in appearance to those seen in the bladder. I have already referred to the significance attached to them by Pellouze. Drawing No. 5 is illustrative, and merely intended to show the location on the lateral urethral walls of these small bodies. Drawing No. 6 shows the appearance of the lateral walls as seen with the cysto-urethroscope drawn well down into the posterior urethra (the magnification is due to the close view).

My experience has been entirely too limited to discuss the significance of these bodies, but they are certainly not to be seen in other chronic types of posterior urethritis, and I have observed them only in the tuberculous.

Kidney—The relative frequency of the kidney infection accompanying tuberculous bladder is well shown in the table. It will be observed that the kidneys were definitely determined to be tuberculous in 18 cases, the left kidney in 8, the right in 9, and both in 1 case. In 3 cases definite evidence pointed to the kidney, but the ureters were not catheterized for the reason that it was either impossible or they would not submit.

Lungs—Lesions were demonstrated in the lungs in two cases, and in one evidence was quite suspicious.

Epididymis—In one case (9) left testicle and epididymis had been removed by Dr. Barr five years before. I am unable to state the

pathology, though the patient claimed it was merely atrophic. In one case (10) a fistula (tuberculous) resulting from an incision into a supporting epididymis existed. In one case (11) a definite involvement of the right epididymis existed. This case had general miliary tuberculosis. In one, the right epididymis had been removed by Dr. E. M. Sanders two years before I saw him.

Seminal Vesicles—The seminal vesicles were definitely involved in two cases, and in one probably.

Tuberculosis elsewhere—History of attacks of pleurisy, which were most likely tuberculous in two cases and questionable in two.

Gonorrhoea—A definite history of gonorrhoea was obtained in five cases.

Loss of weight—In seventeen cases, loss of weight was noted in taking the history. With the exception of two or three cases, it was not a very great amount—probably fluctuating from five to twenty-five pounds. No case was very greatly emaciated.

Fever—Fever occurred in five cases. It was usually of a low grade, and rarely exceeded a degree or more.

Attacks of renal colic—Five cases presented definite histories of attacks of renal colic, requiring in a few instances hypodermics of morphia to relieve the pain. Case 25 had quite a number of attacks, and was treated by several for kidney and bladder stone, X-ray being negative, which led to further investigation that disclosed the true pathology. I regret that I can not report on the X-ray findings in a larger number of cases.

Remarks—In ten cases nephrectomy was done with recovery from the operation; complete relief of bladder symptoms in six—the oldest of these is now four years; the others report a wonderful improvement, but continue to have some frequency and are not entirely relieved of bladder symptoms.

One case operated on by Dr. McGannon died. I do not know the cause of death. One case refused operation and died fourteen months later; three cases refused operation four years, three years, and one year ago. They are still living, but are having considerable discomfort from their symptoms. Two cases refused operation and I have been unable to hear from them. My records are incomplete as to six

others. The testicle and epididymis were removed in one (six months) and he reports much improvement. One died of Addison's disease.

In reviewing these cases, I am more than ever firmly convinced that any case of cystitis which does not yield to ordinary treatment within four weeks should be regarded with suspicion—in fact, should be looked upon as tuberculous, and our every energy exercised to either prove or disprove it.

TRANSFER OF CASUALTIES FROM FRONT LINE TRENCHES TO EVACUATION HOSPITAL.*

BY MAJOR W. J. BELL.

Gentlemen, it will help you to understand conditions that you will meet with in actual warfare as it is now carried on at the Western Front, if you will, as far as you can, live out the picture that I shall present to you.

If you are a battalion medical officer, you will have accompanied your men to their destination, and will, since you are not the first to occupy these particular trenches, in all probability find a dressing station located and partly equipped for you in some protected place, very likely a dug-out.

Your men will have been informed through proper channels of the location of your aid post, and here, assuming that you are in a quiet part of the line, the sick of your men will parade to you.

When the sector of the line remains quiet, your work is, as a rule, very light. Your sick parade, if you have been efficient as to your duties, caring for your men, inspecting their food, looking after their clothing, caring for their feet, and instructing them in that important matter so essential to the success of any army in motion, will be a small affair.

Any casualties, whether of sick or injured, whether these injured are wounded accidentally, that is, by their own guns or men, or by such accidents as naturally fall to the lot of men wherever congregated with the environment conducive to injury about them, or whether wounded by the desultory fire of your alert

enemy, will be disposed of by you after the manner in which you have already been instructed. Some you will mark on your sick report for duty, others for medicine and duty, and others you will excuse from duty, and still others you will evacuate to the Field Hospital or Ambulance Stations, while others you will tag with the prospect of their rapid transportation to the Evacuation Hospital.

As to the surgical work that you will do, if you mean by that purely operative work, with scalpel, ligatures, and sutures, you will do practically nothing, but your work, in a comprehensive sense, will sure be military surgery.

Your sick you will care for as you would at home, as far as you can, provided their illness is slight, and, if severe, you will do what often happens at home, though mostly against your desire, you will let them go on to the hospital for others to treat, but in this case your fee is not lost.

The wounded that come to you will be carefully examined by you, for it is a matter of most vital importance to the welfare of the patient and your own advantage, that you let no case slip by you with some severe injury unnoted. This oversight might, and would, be excused or overlooked in the rush of an engagement, but not in times of comparative quiet.

Remove carefully whatever garments may be necessary for examination, and to this end the most valuable instrument perhaps in your equipment will be a pair of bandage scissors. I found a small file very convenient for keeping them sharp. Whether in base hospital or front line you will find them useful.

Artery forceps you will use, but not very often. The tourniquet you will need to use, and frequently in rush you must leave it on the injured member, and if you do, don't fail to make a note of the fact upon the patient's card in a way to attract attention, and instruct the orderly in charge to inform the next one in charge of the fact of its presence.

Most persons put a tourniquet on too tightly, and I have known a nurse of long experience and of unusual competence leave a tourniquet on for over eight hours without informing the surgeon in charge of the ward, or calling for assistance. There is only one tourniquet that is worth while mentioning, and that is the rubber one with not too much rigidity.

*Lecture before M. O. R. C., Camp Greenleaf, M. O. T. C., Fort Oglethorpe, Georgia.

Instruct your ambulance orderlies to loosen up the constriction even at the risk of some loss of blood, if the journey occupies more than an hour or two in transit to the hospital.

Shell dressings, and bandages, that is, gauze pads of varying sizes and bandages of different widths and varied forms, you will apply as indicated. A snug dressing, whether preceded by the application of iodine or not, will protect the wound and give comfort to the patient. Snug bandaging, yet not too tight—for you must avoid too much constriction—will add to your patient's well being and will give you his gratitude.

Immobilization of solutions of continuity, whether in soft tissues or bone, demand your most earnest consideration, and every effort to effectually carry this out will give you ample returns for your labor.

You will, as a rule, have splinting material at your command, or can avail yourself of cruder appliances usually to be found within reasonable distance. Of special splints and their application in transportation, I shall have considerable to say in the near future.

Warmth. I know of no single thing more to be desired, nor one more frequently called for than warmth. The body heat is greatly depleted by lying out in the awful dampness and penetrating cold. Blankets are available as a rule, and you are seldom placed where you cannot avail yourselves of hot coffee, tea, soups, and the like. One lesson I hope you are learning these cold mornings—I learned it two years ago, and have gone over the lesson again in the last two weeks—and that is the warming up value of a cup of hot coffee or other hot liquid.

Keep your patients full of hot liquids, save, of course, in abdominal wounds, when you must resort to external heat, hot bricks, stones, hot blankets, hot sticks of wood, and so forth. Your patients will complain of the cold and it is a matter of grave import, if upon feeling their extremities you find them comparatively warm to your touch, and yet they complain. It is, as a rule, an indication of great physical depression and carries with it a grave prognosis.

It is wonderful how little the wounded soldier complains of pain, the outcry being, as a rule, in inverse ratio to the severity of his injuries, yet you will administer morphine and atropine quite

frequently—not necessarily hypodermatically—but more often by the mouth.

Its value, especially when combined with whiskey or brandy, as a preventive of shock was impressed upon me by Professor Stephen Smith, nearly thirty years ago in Old Bellevue Hospital, and after observing its benefits in civil practice, in thousands of cases in this war I pass it on to you with confidence.

Rest, Heat, Opiates, combined with a small quantity of alcoholic stimulant, will furnish you with the best means I know for preventing and combating shock.

Your cases, that is, such as you are going to evacuate, you will classify naturally as:

Slightly wounded.

Those of medium severity.

Severe.

Very severe.

Moribund.

Amongst the slightly wounded will be these requiring the simpler dressings and they will be able to care for themselves, walk to the dressing stations, and even help to get the less fortunate fellows along the line of evacuation.

Where the carry is a long one you must be thoughtful for the litter bearer. They are the ultra-heroes of this war, so far as the male sex is concerned, so don't order them to carry men who can walk.

More than once I have seen lazy louts permitting themselves to be carried by worn bearers whom they were infinitely more fit to carry.

Your compound fractures, especially of the lower extremities, and your knee joint injuries will bring into requisition your skill and ingenuity to the limit of your capacity.

In getting these men on the litters, remember the fundamental principle in the treatment of all fractures, more absolutely necessary in compound and comminuted ones and keep the member at all times extended.

Your assistants will soon learn the lessons if you practice them in their presence, and give a word of instruction here and there. Whatever contributes to the reduction and holding reduced a fracture, that do.

Your head cases are in a class by themselves and will, in all probability go to a special hospital, certainly to a special department of the evacuation hospital. You will attempt no surgery here save where urgent indications present,

but carefully dress them and seek to pass them on.

Abdominal cases will demand your special care to see that they are made as comfortable as possible, and particularly that they are placed in a position that will give all possible rest to the abdominal contents; elevate as a rule the shoulders and lower extremities as far as is necessary to this end. Snug bandaging of the abdomen is helpful. In severe injuries to the liver, or spleen, or where the abdominal parties are destroyed so as to expose the contents of the cavity, you will find your task no easy one, but pressure and large dressings will help you to get your patient along.

Chest cases, save where the ribs are blown away and hemorrhage may demand gauze packing and pressure, require only immobilization, and it is remarkable how well most of gun-shot wounds of the chest do.

Now, we have our patients in pretty good shape at the regimental aid posts. What are we going to do with them? It is certain we can't keep them there long unless a barrage or similar obstacle prevents our getting them evacuated.

Now, the getting of the wounded back from the regimental aid post is the work of the ambulance sections and their bearers, so I will suppose that you are at an advanced dressing station with your ambulances, motor or animal driven, and that you are ready for the transportation of any wounded that may reach you.

But how are they going to reach you? They must be carried from the regimental aid post unless they can walk, and even if they walk they may need to be guided.

Considering you then as an officer of the ambulance in charge of the bearers, will you come along with me and we will go to the aid post and observe just how the work is done?

We will carefully scan the heavens for hostile aircraft and note if the enemy have any observation balloons up.

If we see either of these, we will make no short cuts to the trenches up to the front, but if the enemy is without observation, we may quickly go to the communication trench, and as will sometimes, though not always be the case, we may soon turn into a trench set apart for the conveying of the wounded and so named, the wounded trench.

There will be along the way dug-outs occupied by your men or to be occupied by them, where your men will act as relay carriers.

These carrying relays should be made as reasonable as possible in the matter of distance, for these splendid fellows have, under the most favorable conditions, no easy task in carrying their burdens, yet I never heard a litter bearer complain.

You will find it in wet weather a slippery walk, and more than once you will support yourself at the trench side as you slide around on the trench mats. Think what it means to carry heavy men seven or eight hundred yards, and much farther, as they sometimes do, with such footing.

Step into the dug-out and talk to the boys, they will respect you, and if your own, will come to love you for coming to see them.

You will meet the bearers bringing in the casualties, and soon you will arrive at the regimental aid post.

Your men already trained will do the rest, carry in the casualties we have mentioned, to the end of the trenches where, by wheel litters, or by further carrying they will reach your advance dressing station.

Here you will carefully look over the cases, readjust dressings, administer hot drinks, relieve pain, note the condition of those with tourniquets on, and remove or slacken them as seems indicated; see that all patients are properly tagged and make a record, if possible, of those who go through.

Your ambulances are waiting, or will come at an appointed hour, therefore, see that your patients are skillfully placed in the ambulance, that the drivers know the best roads, that your abdominal cases go to the special hospital, or sections of hospitals, as well as your head cases, if there is a place designated for these cases; in a word, have careful oversight of the many details that must have your concern if you would give the best possible services to these men who have suffered and may yet give their lives to the cause of liberty.

Your patients are now on the way to the Evacuation Hospital, and we will leave them and their further disposition for another day.

We left our patients at the last lecture on their way to the evacuation hospital or casualty clearing station, and will for a few minutes consider the functions of that unit and the methods of their operation. This unit you will find located at a rail-head or on some waterway that there may be ready exit to the base. Here for the first time near the front you will find the "nursing sisters" as all graduate nurses are thus designated over there. You will be thankful for their presence. Their tact, their skill, their devoted heroic, uncomplaining service and sacrifice will call forth your highest admiration. Without their aid your efforts would fall far short of the accomplishments you will attempt and that have already been attained by your predecessors.

Patients are admitted in the usual routine manner, their names, rank, unit, religion and character of injury being recorded, together with the wards to which they are assigned. You may find a section designated as a resuscitation room, which designation is self-explanatory. Here the greatly shocked, the exsanguinated and those vitally depleted will receive the attention indicated. You will rely upon rest and heat in all cases where there is depression of the vital forces and will administer sedatives, stimulants or opiates where there is indication for these, withholding them often when your judgment tells you they would be harmful.

Your problem in a time of activity will be to select your cases for operation, leaving as many as possible for evacuation to the base where bed-capacity and operating staff are not so limited. Here, as at the field hospital and field ambulances, the valuable man is he who quickly sizes up his case and correctly disposes of it.

To suggest two rather wide points of range in this matter of disposition of casualties, no man should be allowed to slip through to the base whose injury is such or whose illness is such that in a few days he might return to duty. No time should be wasted in surgical interference upon a moribund patient when those more likely to survive remain untreated. Whether at evacuation, field or base hospital, get it out of your head if the idea ever finds lodgment with you, that you are there for post-graduate work. Your one abiding purpose must be to dispose of casualties.

What methods of operation you will follow or what you will do in a given case I can only indicate in a very general way. One man will succeed by one method of procedure and another by another. Results count, and fine-spun theories have no exalted place in action whether at a county crossroads or in a military hospital. Woe betide you if you fail to deliver the goods. Speed, other things being well considered, is highly desirable in all operative work and is absolutely essential at an evacuation hospital.

The British surgeons, though there are some notable exceptions, are, as a rule, very slow operators, and their work in warm climates and on the western front has suffered through this slowness. Thorough work, yet swift work, wins out. If you cannot acquire speed then, in justice to the wounded, be brave enough to step aside.

Your head cases you will treat in a most conservative fashion, doing that which is clearly indicated and no more.

Your abdominal cases will, on the whole, be disappointing to you, just as similar cases are at home. Your work must be very exact. You will do very few resections of the bowel and end anastomoses seem now to hold preference. Whenever the lumen of the bowel permits of it, you will close your perforations by pursestring sutures and you will use the minimum of irrigation in your work, limiting yourself to that which is essential to completing the peritoneal toilet. Drainage is greatly modified and restricted as compared with the methods of other days.

Your knee joints will either be given expectant treatment with complete rest, "giving," as one observer of wide experience puts it, "every joint its chance," or you may go to the other extreme and radically clean up every knee joint that has been damaged by foreign body. Personally, I am inclined to a middle course, making each case of knee injury one to be considered by itself.

The means used for transporting the wounded to the base as from the front line will demand your study and bring into requisition your best talent and ingenuity.

I have been much impressed, instructed and entertained by what Major Allen, of the Orthopaedic Department, has had to show me in the

way of devices and suggestions for transportation and treatment.

All that he has said and shown me appeals to me. Some of the appliances will, of course, need to be put to the test of extended use before final judgment can be given, but they look good to me.

Base Hospital Work in France.

A convoy of wounded from the Evacuation Hospital, which is situated, as you know, near the front, will reach your Base Hospital, as a rule, by Red Cross Railway Trains, exceptionally they may come by motor ambulances or by waterways. In England, of course, all will reach you, having been transported across the Channel by hospital ships. The probable time of the arrival of the convoy will in most instances have reached you by telephone or telegraph, though it not infrequently happened to us during our early experience in France that our first notice would be the presence of the wounded.

In one hospital where I was, the arrival of a convoy was announced by bugle call, and in spite of the fact that three hospital units were situated close together in that area, with many hundreds of patients needing all the quiet possible, even during the night hours that call would vibrate upon the air, disturbing all who had not taught themselves to ignore it.

In our quarters, where the officers slept, some twenty of them, four or five of the captains would in these groups take their turns at the admitting room, and though only four or five were needed for duty, the bugler would come to the hall and blow a blast that wakened every officer in the barracks—one of the useless and unexplainable wastes of energy—an inconvenience to be endured without complaint.

The card system is most frequently used in admitting, though other systems are in vogue. Name, rank, regiment, religion, character of injury, etc., is recorded, the patients assigned and conveyed to wards—walking, sitting, and cot cases all disposed of in like manner.

Arriving at their respective wards, their clothes and other belongings are properly disposed of, and a bath is given, food administered where necessary or desired and they go to their beds.

If you are attentive to duty, as most of you will be, even though you are not on the admitting staff for a particular convoy, you will, until you get the run of things, at least, always visit your wards when new patients are admitted, giving a little time for nurses and orderlies to get the men settled and ready for your inspection.

Should there be any emergencies amongst your patients, these will receive your immediate attention, and whatever is required may be done promptly whether in the ward or at the operating room.

You will disturb your night arrivals as little as possible, making only such observations and inquiries as are essential for the intelligent care of the men.

In the morning at an hour convenient to the nurse and her staff, you will go through your wards, where your patients will be ready for your fuller inspection and prospective treatment.

Those requiring operation will be listed by you; with the nature of the work you proposed to do, and this information forwarded to the operating theater and a time scheduled for you to operate.

One of your most frequent duties at the beginning of your work will be that of selecting and assigning for X-Ray examination those subjects where foreign bodies are present or suspected. You will not operate upon every case where a piece of metal is present, not if you are wise. No rule should be more radically enunciated—your great military surgeons are as one in this—than that of avoiding unnecessary searching after the mutilation of tissue to remove foreign bodies, often inoffensive or comparatively so, that might far better be left alone, or if removed at all, left for a later time. I shall revert to this again.

Gun shot wounds, or as the term so comprehensive in its scope, abbreviated GSW., will command your interest and careful study. Colonel LaGarde's book I found a faithful friend and tied to its teaching in fundamentals, and can commend it to you with confidence.

You will be astonished by two features of gun shot wounds, viz., the comparatively small damage done by rifle, machine gun and shrapnel bullets; and, on the other hand, the large amount of destruction that you will find result-

ing from very small bits of metal. A very thin bit of bullet or shell casing no larger than the lower segment or an ordinary pen may tear a course through the soft parts that, after you have enlarged the skin puncture, will readily admit your index finger, though your finger be large, and will frequently damage vessels so as to cause primarily grave or even fatal hemorrhage, and quite frequently a very small bit of metal will damage a vessel in such manner as to produce an aneurism. Be on the alert for aneurisms so produced.

An expert radiographer is a joy forever at any hospital. Make friends with him at any cost. If he knows his business and is enthusiastic and a worker, you are indeed favored. If an incompetent, you must still make use of him and his armamentarium, and under such circumstances you will be most fortunate if you have had experience in interpreting X-ray plates and in using the screen.

Beware of getting too positive even with this marvelous aid to diagnosis. Having used the X-ray since April, 1898, and having had practical experience with it in civil and military surgery, and appreciating its inestimable value, may I remind you that it is not the whole thing in diagnosis, operation or treatment. Clinical observation and experience are still valuable assets to the surgeon.

Use it for what it really can do. Go carefully and it will seldom grievously disappoint you. Go in with a rush where even the experienced and trained might well go with trepidation, and the reward of the foolish will be yours.

My friend, Major Musson, of the Shorncliffe Military Hospital, a man thoroughgoing and of a large experience as a radiographer, told me that he saw a doctor cut and search for half an hour to remove a foreign body when the sole evidence of metal upon the X-ray plate was the shadow of the metal marker, used as a guiding point, and this, in spite of an effort made to inform the tyro of the nature of the marker, which humane and kindly effort was received with the pompous assurance that he knew how to interpret X-ray plates. A similar blunder came under my personal observation, where a poorly qualified man, though possessed of much self-assurance, boldly declared that no metal was present in the arm, giving as his reason that his wretched antiquated probe found no contact

with metal, yet the X-ray plate, a very clear one, showed a piece of metal as large as the distal phalanx of your finger on the side of the arm opposite the area of his mutilating manipulation. Two days later the foreign body was removed by an incision little more than skin deep.

In another hospital I saw a man, who writes voluminously and argues convincingly, mutilate a hip until you could have thrust your four fingers full length into the area, and not once was he within an inch and a half of the small bit of metal sought, and which he failed to remove, the whole sickening business resulting from ignorance of X-ray plates and of even minor-surgical principles.

In spite of every care, you will at times fail to locate and remove foreign bodies, but your failures will rapidly grow less as your experience increases.

Failure to find and remove a foreign body is always disappointing and depressing, but not disgraceful, else all men who have fished for bits of metal would be in disgrace.

It is most reprehensible and cannot be too severely condemned to so increase the trauma already present that you leave your patient in worse condition than you find him. A few suggestions as to the removal of foreign bodies following the lines mentioned at the outset.

It may be laid down as fundamental that no attempt should be made to remove a foreign body where the manipulations of removal will cause more damage to the parts or greater danger to life than would result if the offending object were left undisturbed.

The excellent results so often accruing in those cases where you dare not interfere give ground to consider well your course in questionable conditions. Where the foreign body is a source of offense and danger, there is but one thing to do—go after it.

Your radiographer will, as a rule, mark approximately the location of the object, giving measurements supposed to be mathematically precise as to depth and distance from a given point or points.

Unless I can avail myself of the screen, I greatly prefer to mark, with a bit of fuse wire or common pin, the marker being held in place by a bit of adhesive plaster, the wound of entrance, or other familiar landmark, and then

have two exposures, a lateral and an antero-posterior.

It will, I hope, give you some confidence and comfort to be told that in the majority of instances you can, upon slightly enlarging the wound of entrance where necessary, follow the course of the missile to its bed with your index or little finger.

Gently insinuate your finger along the pathway of the missile to its bed, carefully explore the location, press the tissues aside, being ever watchful to avoid further laceration of the soft parts of damage to important anatomical elements, slip a pair of forceps alongside your guiding finger and grasping the object, bring it to the surface.

Counter incisions or the enlargement of openings already made to aid in safely removing foreign bodies are always in order. You have heard of the magnetic vibrator. A friend of mine, a most competent man, whose judgment I rely upon, was enthusiastic in its praise after using it a few weeks. My own use of it was limited to a few dozen cases. It was a disappointment to me, and for a reason well expressed by Major Cross of the C. A. M. C., "It helps you in those cases where you do not need its aid and fails entirely where you most require help."

In dealing with non-magnetic bodies, it is, of course, useless.

The device is well worth your giving it a fair trial, for you will need and gladly avail yourself of everything that helps you or your colleagues to win out. I would put you on your guard in the matter of dogmatically attempting to estimate from the size of the wound of entrance the dimensions and character of the suspected foreign body.

A puncture very like that of a sharp penknife blade may mark the entrance of a rifle bullet. Such a case came under my care at British Stationary Hospital No. 8. A slight mark was noticed upon the patient's heel, and because of his complaint of pain an X-Ray plate of the tarsal region was made. It showed no foreign body. The Surgeon Supervisor, very positive in all things and new at his work, pronounced the man a fakir.

The patient's pain seemed genuine and a second plate, taking in the whole foot, revealed a rifle bullet lodged against the plantar aspect of

the metatarsal phalanx of his great toe, which bullet was easily removed.

Where an irregular piece of metal produces a perforating wound, you will find the destruction of the soft parts out of all proportion to that, which, without previous experience, you would expect from the size of the wounds of entrance and exit. These wounds demand much thought and skill in their treatment, and it is in dealing with such that the Carrell-Dakin technique, if you can avail yourself of it, will give you much satisfaction. It is a beautiful method to read about, of limited application at the Evacuation Hospital, or C. C. S., has a very definite place at the Base where skilled nurses and surgeon specialists, with adequate apparatus and ample time may carry out this particular method. Select your cases and this method and it may well be added other methods will give gratifying results.

A perforating gunshot wound from rifle or machine gun bullet, as a rule, heals with little or no infection, and you will be surprised how many of these cases you will be able to return to duty in a few weeks. There came into my wards one year ago now two cases of perforating gunshot wounds of the neck—in one the bullet took a transverse, in the other a lateral course, and each of them through anatomical areas where it seemed unthinkable that a missile could pass without grave or fatal injury, yet these men I returned to duty within six weeks.

You will not infrequently have your attention drawn by a rise of temperature, or complaint of pain, to abscess formations, and on proceeding to evacuate the pus, will find foreign bodies of no inconsiderable size heretofore unsuspected by you or the patient. The same experience will occur in wounds that refuse to close in the time anticipated. An experience the diametrically opposite of this will be where the patient will give a positive history of exposure in the vicinity of explosives, yet the X-ray will reveal no foreign body and the wounds will heal quickly. These injuries are puzzling in the extreme. I do not attempt even a suggestion as to their method of production.

There is one other feature to which I want to draw your attention, believing that it will be helpful to you, and certainly will guide you in your dealings with men from the various states of the Union. Our troops will come practically

from every variety of climate, from the frigid North to the sub-tropical conditions that pertain in the South. It would seem to be elementary and require no argument to convince you that the more rigorous the climate the more vigorous and resistant the men are, and the less will they be injured by the various traumatism to which they will be subjected. The man who has lived along our northern border, or in the mountain regions of our western states should, in all reason, be more resistant to the effects of injury than those of the central plains and of the far South.

Certain it is that I noticed the greatest difference as to the amount of shock and the degree of infection among those who came from Scotland and the north of England and from Canada, as compared with the colonials who had been born in, or had had long residence in the warmer climates. One from the rigorous northern climate would carry relatively large quantities of metal with comparatively little or no suppuration and with the minimum of shock. One was constantly astonished at the extensive areas of destruction, and contamination where little or no shock and little or no infection supervened. When the colonial troops from the warm climates came into my wards there was always an added anxiety, for it was amongst these that, so far as my observation went, a larger percentage of cases of gangrene developed and the staphylococic and streptococic infection appeared in greater intensity. It was true also that amongst these the temperature range was more extreme. I trust you will find it of advantage if you will be guided in the care of your patients in some measure approximating the indications I have attempted to outline.

THE TREATMENT OF PURULENT CONJUNCTIVITIS.*

By J. T. HERRON, M. D.,
Jackson.

Mr. Chairman and Members of this Section:

My subject as printed in the program is "Gonorrhoeal Ophthalmia." I ask the privilege

*Read before Section on Ophthalmology and Otolaryngology at Annual Meeting of Tennessee State Medical Association at Nashville, April, 1917.

to change to the "Treatment of Purulent Conjunctivitis."

It is not advisable to give the symptoms of this disease, as every text book on ophthalmology is very clear on this subject. This disease has become so prevalent within the last few years that a diagnosis can be made by any general practitioner, whether he is skilled or not. I dare say only a few, if any, can make the statement which our dear Dr. Happel made before this Association in May, 1897, in this city, in discussing a paper on "Purulent Conjunctivitis and its Treatment with Argonin" by Dr. Frank Trester Smith. I quote him in full: "Mr. President—I want to display either the wonderful amount of ignorance I have about this subject, or our women are cleaner or something, for as a medical practitioner I have yet to meet with the first case of gonorrhoeal ophthalmia or ophthalmia neonatorum, in a practice of over a thousand obstetric cases."

Would that every physician in this Association with as wide and varied experience could make the same statement. It would make us feel that our young men are better than at that time; instead I fear the reverse is true. I hope to see a universal law compelling each man before he marries to be examined by an expert and if he has or has had gonorrhoea, not to issue marriage license until he is cured. It is an outrage perpetrated upon our innocent daughters to have them contaminated and infected with such a vile disease. Something radical must be done if we wish to lessen and prevent a disease which has filled many of our blind schools and rendered miserable some of the best women on the face of the earth.

The Massachusetts Charitable Eye and Ear Infirmary has a building, isolated from the main structure, which is devoted exclusively to the treatment of contagious diseases of the eye.

Text books published more than thirty years ago advised the following treatment: First, cleanliness; iced compresses in the stage of swelling, with applications of silver nitrate, solution of bichloride of mercury, solution of potassium permanganate, iodoform and boric acid, etc.

Dr. Savage in discussing Dr. Smith's paper referred to above, said nitrate of silver was the most reliable remedy for purulent conjunctivitis. He also said he believed two drops of a

very dilute solution of acetic acid would destroy the germs. In his last discussion he thinks citric acid or lactic acid would kill the germs. Dr. Steele in his discussion considered silver nitrate the "sheet anchor." He also advocated heat instead of cold. Dr. Smith closed his paper by advocating Argonin to take the place of nitrate of silver in preventing ophthalmia neonatorum because of its non-irritating properties.

In June, 1904, at Atlantic City, Dr. Myles Standish read a very able paper before the Section on Ophthalmology on the treatment of purulent conjunctivitis from a gonorrhoeal infection, in which he claimed the gonococcus could be found in from 60 to 65 per cent of all cases of purulent ophthalmia. The records showed at that time that 91 cases under 5 years of age within 20 months had been admitted to the Gardner Building; 64 per cent from a bacteriologic examination proved to be gonorrhoeal infection. Cleanliness then as now was the first essential,—frequent washing of the lids. He makes the statement that when nitrate of silver was relied on for the direct treatment of the disease, the manipulations necessary to properly apply it and to wash off the excess of the solution greatly favored injury of the cornea and many eyes were lost from this process.

About this time other silver salts, protargol and argyrol, were extolled on account of their germicidal power and non-irritating properties; also, easier of application, thereby less dangerous to the cornea. The specific gravity of these solutions is such that, sinking deep into the cul-de-sac, pus and mucus rise to the surface and can be removed with less danger than formerly.

Dr. Standish reports 50 cases of ophthalmia neonatorum from the records of the Gardner Building treated with nitrate of silver. Of these 50 cases, there were three that had clear cornea on admission, which subsequently developed ulceration of the cornea sufficient to interfere with vision. These showed 6 per cent of unsuccessful cases. 150 cases were treated with protargol and among this number 3 cases were admitted with clear cornea which afterward developed ulcers. This gave 2 per cent of unsuccessful cases. The protargol solution was increased from 4 per cent in the beginning to 20 per cent, and, in the last 50 cases treated, no baby with clear cornea on admission had any corneal complication.

The cases treated with nitrate of silver remained in the hospital an average of twenty-three and one-half days. Those treated with protargol were in the hospital sixteen and one-half days. Soon after these experiments were made, argyrol was used as a local application in 64 cases of ophthalmia neonatorum with gonorrhoeal infection which entered this Building with clear cornea. All of the 64 cases were discharged with clear cornea, and the average stay in the hospital was eighteen and two-thirds days. Nine cases entered with hazy cornea, of which only one had an ulceration. Nine cases entered with corneal lesions in which only one eye was lost. The line of treatment in these cases: Washed the lids every half hour with boric acid solution; used vaseline to prevent sticking of the lids; used freely protargol or argyrol, every half hour to four hours; cold was not applied at any time during the treatment. None of these cases were discharged until two negative smears had been made under the microscope on successive days.

It will be seen from these reports that of 114 consecutive cases admitted with clear cornea and treated with protargol or argyrol, no case developed corneal ulcer, and in 9 cases admitted with corneal involvement, only one ulcer developed.

The records show that 10 per cent solution of protargol gave better results than 20, 30 or 40 per cent solutions. The results obtained with 50 per cent solution of argyrol were no better than 25 per cent. The only advantage argyrol had over protargol was that the former was not so irritating.

Twenty-eight cases were admitted, 18 of which had clear cornea, treated with 10 per cent of protargol, 14 being discharged without complication—about 78 per cent, and of the 14 cases in which the cornea became involved only one eye was lost. With 20 per cent, of 12 entered with clear cornea only 5 escaped corneal infection, or 42 per cent. Argyrol was used in 37 cases; the solution was 15 per cent in 2 cases, 25 per cent in 19, and 50 per cent in 16 cases.

Of 23 admitted with clear cornea, 16 were discharged without corneal lesion, or 69.5 per cent, and of 21 cases in which corneal lesions were present on entrance or subsequently developed, eight eyes were lost, three of which entered with clear cornea.

When these reports were made most ophthalmic surgeons thought they had reached the highest ideal in the treatment of purulent ophthalmia in which gonococci were present. I believed they had until a few months ago when Parke Davis and Company announced to the profession another new silver salt—silvol—a new proteid-silver compound containing about 20 per cent of silver. I have been using it for some months in different purulent conditions, especially of the eye. I have abandoned argyrol and have never used protargol only in one case in connection with it. I believe my experience with silvol, in 5, 7.5, and 10 per cent, has given me better results than much stronger solutions. I used it in connection with protargol not long since in a case of gonorrhoeal ophthalmia.

Young man, age 20, consulted me in less than 24 hours after his eye began to inflame. It is not always easy to diagnose gonorrhoeal ophthalmia in the beginning stage. I was assisted in this by asking him if he had this disease, his reply was that he had had it for four years and had been treated a great deal but had never been cured. I believe the cases of long duration generally end up in an infection of the eye on account of carelessness.

I had him go to hospital at once, as we should never attempt to treat these cases without a competent nurse. This case was very violent. I had the secretion removed every hour or less the first 24 hours with tepid boric acid solution. I do not use iced compresses nor cold at all. After cleansing the eye, I alternated with a 10 per cent solution of protargol and silvol, one every 2 hours, always using vaseline freely between the lids. In three or four days the swelling began to reduce. About this time he complained of the protargol burning so much, that I stopped it and continued the silvol. In eight or ten days he was ready to go home, but on account of the severe cold he remained in 14 days, practically well on going out.

The question has been asked, "How do you know that silvol did so much in this case, as it was used in connection with protargol? The answer is that I had never used it in gonorrhoeal ophthalmia before, and I had used protargol many times, but never with such brilliant success. I have used it a great deal in non-gonorrhoeal ophthalmia and am ready to say that I have had, within the past week, several purulent

cases with a violent beginning which was controlled in one-half the time taken to secure results with any remedy I have ever used.

I have had one case of ophthalmia neonatorum recently which had ulceration of both eyes before I saw it. I used a 5 per cent solution every 2-4 hours, and there was improvement on the following day in the amount of pus.

If silvol is all that is claimed for it by its manufacturers, from some experiments made and described in a small pamphlet, it can be relied upon with much greater confidence in all purulent ophthalmia cases than any of the silver salts. The tests made by the above firm show that the gonococcus is killed by a 5 per cent aqueous solution in one minute, by a 10 per cent solution 1 1-2 minutes, and by a 20 per cent solution in 2 1-2 minutes.

I believe that if a case is properly handled with a competent nurse, first cleansing as often as the case demands, and a 10 per cent solution of silvol for adults and 5 per cent for infants, the gonococcus will have a deadly enemy. I do not see why it could not be used with safety in 10 per cent solution in the eyes of the newborn babes instead of nitrate of silver. I do not wish to underestimate nitrate of silver, because it has stood the shot and shell for many years without being cast aside, so far as power goes. Silvol used in any pus cavity of the head and throat is much more agreeable and satisfactory. I have used it in the most severe forms of infected eyes with gratifying results.

I consider silvol a great aid to the ophthalmic surgeon. After removing a large piece of steel a few days ago from the anterior chamber of an infected eye, steel imbedded in iris, with the magnet, I had some fear, because the wound of entrance was infected. I wish to make a statement here in regard to this case. The man said that he would not allow his child's eye to be opened with a knife or anything of the kind. The wound of entrance of this steel was just one thirty-second of an inch inside of the sclero-corneal junction, and it had been done about forty-eight hours. There was a great deal of pus pouring out of the eye, and the wound of entrance was already infected. I told him I would use the magnet, and if I could not succeed in getting it with a magnet I would open the anterior chamber. I had to make this statement to the man, because the cost was men-

tioned, and I put the cost down to as little as possible, twenty-five dollars. He came in and said "No, I will take my boy home." I said "What! are you going to take your boy home with this piece of steel in his eye?" He said "How much do I owe you?" I said "You owe me nothing; only two dollars for an examination, but you cannot afford to take this boy home with this piece of steel; you will have to have it removed, or lose the eye. I will tell you what I will do." I didn't know anything about the circumstances of the patient at all. "I will make an examination of this eye, and if I do not succeed with the magnet," (but it handicapped me because I knew I could succeed if he would let me open another entrance into the anterior chamber, and he said no, he would not do that.) "I will charge you five dollars if I cannot succeed with the magnet; if I do succeed, I will charge you ten dollars, and of course the case will stop there if you do not let me go further." He said he would let me use the magnet. I used the magnet, and made a failure at first. I used the long tip; many of you know the Giant magnet. I cocaineized, and took a little spud (didn't let him know anything about that), to see if the wound of entrance had been closed. It had been closed. It opened, notwithstanding that it was full of pus. Then I took off that piece of magnet and put on another point much shorter, I suppose about two inches, but much thicker and heavier. I placed it over the wound of entrance, and it disappeared—and I didn't get it off the magnet. I saw it had disappeared and could not find it for some time, but after I cut off the magnet and removed it from the table, the nurse found it on a piece of paper underneath the magnet. Of course, I would not have opened this eye under any consideration with a knife, because if I had, and there had been infection, I would have probably been sued for damages, because I would have practically lost that eye, and I couldn't afford to do that. But I did succeed in removing the steel, which I was glad of. I used a 10 per cent solution freely several times before I allowed the boy to leave the office. He tore the bandage from his eye during the night and came to the office next morning early in the cold. All infection had ceased. I filled the eye full, applied the bandage and sent him home rejoicing.

DISCUSSION.

DR. LEVY: Mr. Chairman, there is not much to add to the treatment along with the remarks that Dr. Herron made, except that I want to add that for some time in purulent conditions I have used what is known as optochin or Ethyl Hydrocupreine Hydrochloride which is a foreign preparation, and in these purulent conditions, it seems to do, in my opinion, more than any other one drug that I know of. I have used it recently in a case of gonorrhoeal ophthalmia, and in another case which I will report later in detail. This was a case of measles, which was followed by infection. The patient was well of the measles and developed this purulent ophthalmia, which was not gonorrhoeal, but the slide showed staphylococci and morax axenfeld bacilli. When I saw the case it was twenty-eight to thirty hours after the original development, the right eye was filled with pus and later an evisceration was done. The left eye, the cornea was sloughing, and there was some pus. I first used argyrol twenty-five per cent solution, which seemed to clean it, but it didn't hold it. At that time I could not get optochin. I had one of the drug houses here telegraph to Merck & Company, and they had an ounce sent. Since using the optochin I have been able to hold left eye, and am in hopes that later on it will do some good. My success in these purulent conditions I attribute a great deal to the optochin.

It was brought out by some one, I forget just who, that it is not wise to drop argyrol in the eye and then think you have done your duty. Until you have dropped argyrol in and then washed it out and then put the second drop in, you have not treated that eye properly, for the reason that the first drop will form an albuminoid. I believe that it correct then after you have washed that out, your silvol or argyrol will then act better upon the condition.

Dr. ————: Can you get that optochin now?

DR. LEVY: It is hard to get, but the drug house had no trouble in getting it for me, but the retail drug houses as a rule do not handle it. I have tried quite a few of them.

DR. CHARLES HUFF DAVIS: I will give you briefly a treatment for this condition that I instituted in the Illinois Charitable Eye and Ear Infirmary. I don't know whether they still keep it up or not, but we never lost any eyes. The main irrigation was a solution of formalin (you know, a 40 per cent. moisture of formaldehyde gas). This irrigation was kept up continuously, day and night, at intervals of two hours, oftener if necessary. Each irrigation is to be kept up, continued each day, until every vestige of secretion is washed out, because that is the medium of culture. The nurses are always instructed never to wipe the conjunctiva for any purpose, because the adherent secretion is sometimes a part of the necrotic cornea. If this is wiped out you have a perforation instantan. We always use

cold applications, iced cloths continuously, a pan of ice by the bedside, a gauze on the eye, and when that was ready to be changed we put the one on the eye back on the ice. Atropin was used on account of the secondary iritis that very often involved these cases, and on account of its effect as a corneal stimulation. If there be such a misfortune as to have a corneal cloudiness, which produces ulceration of the parts, and a perforation depending upon the location of the cloudiness, whether central or peripheral, we use a mydriatic or myotic.

There has never been in my experience anything that takes the place of nitrate of silver. I have never used silvol. I would be very much interested in trying it on some less violent disease than gonorrhoeal ophthalmia. Argyrol and protargol, in my experience, have been time wasted. I use nitrate of silver once daily, following its application with boric acid irrigation.

I do not want to be accused of ungallantry in saying anything that detracts from the traditional loveliness of woman that some Southern men have, "one of which I am whom," or of women in general, but men are not always to blame for this infection. I have seen no less than six cases in twelve years, where the woman is supposed to be a nice girl, who had been operated upon for gonorrhoeal tubes, and there was no other history except that the history of the trouble came from that direction. All of which reminds me of Kipling's poem entitled, "The Female of the Species is Deadlier than the Male."

DR. MOORE: What strength of formalin do you use?

DR. DAVIS: One to five thousand.

DR. G. C. SAVAGE: I don't know whether I would have said anything or not, Mr. President, if you had not put me on ice. I believe one of the most harmful things that can be used in purulent ophthalmia is ice; and I believe the time is coming when nobody will use it. They are becoming fewer and fewer all the time, according to my observation and reading. Some fellows held on to it until they gave it up by degrees, and having reached the indication for its discontinuance, later they were ready to discontinue it entirely. They said, whenever the cornea becomes hazy, when you have been using ice compresses, do not use them any longer. Continual use of ice compresses is not scientific, and it is hurtful. Cold, to do good and not harm, if used at all, should be used only up to the point of constricting the blood vessels, then should be withdrawn, until the blood vessels become congested again. But cold, as an agent in the treatment of purulent ophthalmia, is so dangerous to the cornea that it is better not to use it at all.

As to the treatment referred to in the paper as having been spoken of by me, I do not recall it exactly, but I have not used nitrate of silver in the treatment of purulent conjunctivitis for a good long while.

I was a long time doubtful of the effectiveness of

argyrol. It had been proven that in the laboratory argyrol would not destroy germ life. It had been proven, apparently, by therapeutical application, that it would destroy germ life. And, finally, the laboratory has determined for us why it was that in the laboratory it was powerless to kill germs, and when brought in contact with the conjunctiva, it would kill them; and that laboratory finding was to the effect that when argyrol, in strong solution, is dropped into the conjunctival sac it acts upon the white blood cells and develops an agent which has been named leucin, which is a deadly germicidal agent. So that after all, the observations of men who have used the argyrol in the treatment of purulent conjunctivitis were put on sound ground, for it certainly can destroy germs, though in that indirect way. Since 1894—and that is now twenty-three years—there has been one agent in purulent conjunctivitis that I have continuously used, and have used it frequently, and that agent is known as the "Scott solution," or "the Scott mixture." In the meeting in San Francisco in 1894 he presented a paper in which he advocated hydrastin sulph. gr. 2, tincture of opium oz. 1, and boric acid grs. 20 in water fl. oz. 1. This he used freely and frequently. Some who heard that paper were very much impressed with it, and no less a person than the late Dr. J. L. Thompson, of Indianapolis, became so fond of the agent and so convinced that it was efficient, I have heard him say, that he didn't want anything else in the treatment of purulent conjunctivitis, except the Scott solution. It constricts the blood vessels, has an anodyne and germicidal effect, and it ought to be used, and is perfectly harmless, of course.

Since the introduction of protargol, I have undertaken the treatment of purulent conjunctivitis in infants and in grown persons with a degree of confidence that I had never been able to command before, and since the discovery of the fact that leucin is developed when argyrol is administered in the eye, I use all three agents, protargol one time a day, solution of 40 grains to the ounce, and argyrol eighty grains to the ounce every four hours, and hydrastin tinct. opium and boric acid frequently—every two hours; and of course cleanliness is absolutely necessary.

I don't know that I would have spoken, except that I wanted to jump on the ice compresses with both feet, and after getting off, jump on it again. I am sorry that our chairman made a slip in that direction. He will learn better as he grows older.

DR. DULANEY: I would like to make a few remarks in defense of argyrol. I was the first man to report the result of the use of argyrol in the State Society. This occurred a few years ago, in Memphis. Dr. Savage will bear me out in that statement. At that time I had had four consecutive cases of purulent ophthalmia of gonococcic origin. And in those cases I used argyrol with very gratifying results.—I want to say this in regard to the argyrol and the way in which it should be used. Now Dr. Davis spoke of using ice in these cases.

Now argyrol acts best where you apply heat, and keep hot fomentations, that is, hot applications on the eye almost constantly. What Dr. Levy had to say in regard to the second application of argyrol is very necessary indeed. The way I have gotten the best results is to keep the eye immersed constantly in the solution of argyrol. The first two or three hours of treatment I use a fifty per cent solution of argyrol, and after the secretions begin to diminish, then I reduce the strength of this argyrol solution to twenty-five per cent; after that sometimes you find considerable edema following the frequent immersion in the solution of argyrol. This edema can be reduced by the use of these hot applications. The chemical change that is produced in the argyrol is what destroys the gonococcus itself. Now we know that the gonococcus, technically, in its pathology, in one way, is this: that it has a tendency to imbed itself deeply down into the tissue or mucous membrane, and the constant liberation of the nitrate of silver, that is silver albuminate, the silver that is freed is what does away with and destroys the new infection, as you might term it.

I have tried silvol. Silvol is an excellent application of silver, if you will confine it to the other cocci instead of the gonococci.

It is necessary in these purulent conditions to always have a microscopic examination made to verify your results, and then you can report whether or not your results obtained are from the gonococci or from the other cocci. You take a streptococcus infection and things of that kind, there is no doubt but what the nitrate of silver may produce the same results and have the same efficiency as the silvol, and you do not have to use it so often. But where you have a gonococcus infection, it is necessary to keep this solution of silver at all times, because the infection itself is deeply imbedded, and the new crops that are constantly coming out on the surface and producing a breaking down of the epithelium, and all that, is what we want to come in contact with.

Now as to the nitrate of silver for the new-born babe, as a routine measure. At that time the child's eye is infected by passing through the birth canal, and I know this, that before these gonococci have had time to penetrate deeply into the mucosa, we know then that the nitrate of silver may destroy it; it does not take a strong preparation of silver. Now whatever preparation you may use to destroy the gonococci, the main thing to do is to keep it present all the time in the treatment of these purulent conditions; but where you need to destroy it, there is not anything that will take the place of nitrate of silver, and it will be unwise for us at this particular time to advocate something new, when the State laws require the general practitioner to use nitrate of silver at a certain per cent, and which absolutely destroys the gonococci, which has not had time to take deep hold. It might not do the next thirty days after birth, but if it is immediately applied as out-

lined by the State Board of Health, then you get your results.

I have not had as many cases of purulent ophthalmia to treat, by any means, of gonococcus origin, since reading that paper, and the physicians in my particular locality have all gotten on to the use of argyrol. They begin to use argyrol 25 per cent., and they keep the eye bathed and they get splendid results, and as an antiseptic measure there is not anything that will take the place of argyrol.

Some of us are liable to come in contact again with the epidemic form of cerebro-spinal meningitis. What applies to the gonococcus applies to the meningococcus just the same. In regard to the efficiency of argyrol in that epidemic that occurred in Dyer County. Argyrol is the only thing, in that epidemic, that destroyed the infection in those carriers, where the infection was confined to the mucous membranes of the nose and the sinuses, argyrol is the only thing that will destroy the meningococci, and does this by the constant liberation of silver.

Dr. Litterer and those engaged with him, used it to stamp it out in the Industrial School at Nashville.

Now those are the observations made and backed up by the best pathologists we could get in the country. The same thing applies to gonococcus infection. I never fail to have a microscopic examination.

DR. DAVIS: If the section be interested in knowing why ice will be continued in my practice, the Chairman will entertain a motion for the reason that I want to explain the scientific causes for its use.

DR. SAVAGE: The Chairman is a privileged character.

DR. DAVIS: The use of ice water has been assaulted on account of its lack of science. The other cause of its assault, I think, is sentimental. The bacteriological laboratory comes to our relief in arguing for the use of ice because specific germs and organisms do not propagate themselves very readily in cold media. Then physics and physiologists come to our relief because the cold lessens the caliber of the blood vessels, hence the chemosis has a lessened strangulating effect on the cornea. I want to take issue with Dr. Savage on the proposition that the ice causes corneal cloudiness. The thing that causes the cloudiness of the cornea is the strangulation of the circulation due to the violent chemosis that we find in gonorrhoeal ophthalmia. This chemosis is so violent at times that it is my practice to cut the outer canthus at the beginning, to reduce the pressure. The third reason that we use ice is because it feels good to the patient and they appreciate it. These are the reasons why its use is going to be continued in my practice; the chemical reasons, the physiological reasons, and the mechanical reasons. The chair accords to Dr. Savage the privilege of a second discussion.

DR. C. J. BROYLES: Just a few words. I want to pay my respects to ice. I believe that ice would be a good thing. I think your reasoning is correct. The only thing in the way of its use is the cornea; ice so lessens the vitality of the cornea that it is not able to withstand the assaults of the germ. I have never seen it used that it did not do harm. I don't believe that I have ever seen a case in which ice was used, unless it be for just a very short time—probably an hour—that it didn't do harm.

As to the use of argyrol: I didn't know the particular way that it does its work, but I knew that it was a very useful remedy, in pretty general use. I am not sure whether the drug has a direct germicidal action, or an intermediate chemical change takes place through the white bodies. The latter idea will probably explain why the weaker solutions seem to act as efficiently as the stronger ones. Protargol may be useful, but in my hands it is more painful.

I had three cases in one family, recently. I had no microscopical examination made. I knew one of the boys had gonorrhoea, and his mother and his brother had it from him: when he came in, one eye was so well advanced, there was a large staphylococci; the other eye violently attacked, with a little steamy segment in the lower portion of his cornea. I used argyrol, used it constantly, in a forty per cent solution, irrigating the eye every hour of the day, and every two hours at night, saving him pretty fair vision, though he developed a large ulcer which was confined to the lower portion of his cornea. He is going to have very good working vision. His brother had a violent attack in both eyes. The lids were swollen until they were pouched, and I think if ever on earth would have been a good time to use ice, it was then, but I thought of his cornea and refrained, and treated him with the argyrol and frequent irrigations. He got well, with good vision in both eyes. The mother was treated early the same way, with complete recovery.

DR. CHRISTENBERRY: I don't think it matters so much as to what silver salt we use, so we get the results. Dr. Levy and Dr. Dulaney have well said that the first application should be washed out. I think I get better results in washing the first application out and holding the lids open and the head back and give the eye a good bath in argyrol. I never use less than a 25 per cent solution of argyrol, although some time ago there was an advocate of argyrol in my office, a friend from Texas. He said he always used a two per cent. I don't know what he got, more than just a little coloring. And of course in these acute conditions we can safely use argyrol. But the other day there was a patient in my office—of course this may be off the line somewhat, but along the line of the use of argyrol,—more than a year ago the doctor had her using argyrol, and she is still using it, and had an argyrosis. I don't think we should keep

up the use of argyrol too long, and I don't think it is a good thing to put in the hands of a patient; they will find out it is a good thing to use and it may become chronic, and I don't think it is a good thing to prescribe for the patient; as it soon becomes inert, and they keep up its use and do more harm than good.

As to the laws, it has been suggested that there should be certain laws regulating marriage. Examination before marriage, I think, should apply to both sexes as well, and then there should be some other laws, with regard to prostitutes and people running at large distributing these infections.

DR. J. P. CRAWFORD: I want to speak as to the ice. I want to condemn it in stronger terms than my friend, Dr. Savage. My experience has been that ice ought not to be used.

Now another thing that I arose to speak about, is the question of nitrate of silver. I have been advising for the last eight years, through my report to the Blind School, and my biennial report, that nitrate of silver be discarded entirely,—I mean among the doctors generally. I find out there at the school we have a good many gonorrhoeal ophthalmia cases. I find that they all say the doctor used a strong medicine in my eye and put it out; every one of them has been telling me that for ten years. I have advocated the 20 per cent to 25 per cent, or even 50 per cent argyrol in these cases; there is no danger, no pain in it, and you don't have the mothers jumping on family physicians and saying you have ruined my child's eyes. The law requires every one to use some remedy, and you do set up, sometimes, an inflammation by the nitrate of silver. If you have a gonorrhoeal ophthalmia and you lose your eye, then the doctor is going to be blamed for using strong drops. With the argyrol, or the silvol for that matter. I am not partial to one or the other. I have used more argyrol, and I have gotten in the habit of writing for it. I know that either is efficient and do not hesitate to rely on either one of them alone.

Another thing that I have tried to call the profession's attention to in these articles, because I have been requested by Mr. Armstrong to write an article on this question, is, that it does not necessarily mean, as we have all been taught, and even in the late books, that gonorrhoeal ophthalmia will occur in not less than two to three days. Now it just happens that I had a case some six or eight years ago that occurred on the 12th day. I used the argyrol and then had a test made of the secretions from the child's eye, which were negative. I then had the test made from the vaginal secretion of the mother and the secretions were loaded with gonorrhoea germs. Now that woman was attended, and the child, of course, by the same nurse. I have strenuously advocated in my work that it does not mean necessarily because the case develops in ten days or two weeks that it is not gonorrhoeal, because where the nurse is looking after both the mother and the child—and that is usually the case

—the child is liable to be infected, as it was in this case. There was not one question in my mind, and the pathologist, Dr. Jones, of Nashville, when I explained the matter, said "I have not been able to find the gonococci in the specimen that the argyrol has been used in." As I say, he found it in the mother's discharge, and there was not any question about the diagnosis. Both eyes of the child were infected, and it went on to complete recovery without any trouble whatever. I have used it in three or four other cases since, and all of them got well. And so far as I am concerned, I have discarded nitrate of silver for all time, because it is painful and the other is just as efficient and, at the same time, is not painful at all, and I do not believe there is any danger whatever in using it. I am not an advocate of argyrol over silvol or any of the albuminous silver salts.

DR. DAVIS: Before you start, Dr. Price, may I say one word? Dr. Broyles' idea of a freezing of the cornea is wrong. The cornea is very resistive and people who have been frozen to death have escaped any corneal involvement. The Eskimo lays himself down and sleeps comfortably all night long, in a climate that is colder than ice. The iron puddler works all day in a "climate" that is hotter than the hot applications. It is not these agents that interfere with the circulation of the cornea, but it is the chemotic ring and the strangulation.

DR. BROYLES: What is the temperature of an Eskimo?

DR. DAVIS: It is bodily temperature and it is properly heated by the body and has the same protection by bodily temperature in the use of ice that it has in the use of heat.

DR. GEO. H. PRICE (Nashville): As I was about to remark, before I was interrupted by the Chairman,—which is his privilege—that the use of ice up to a certain point may be indicated in hospital practice. The use of ice, after a certain point, is always contra-indicated. If you are treating a case in which you suspect gonorrhoeal infection in the eye, but you have not yet pus, but you have all the evidences of infection, the mother being infected, you have reason to believe that the child is infected, you can treat with ice until and only until there is a slight appearance of pus, up to this point ice will be effective. You cannot lower the temperature of the cornea much below 97 degrees, or a little less than that, if you carry it much lower than that, the cornea develops a hazy aspect, that is due to a restriction, or a constriction of the capillaries around the cornea, and failure of the inflow and outflow of normal lymph and the accumulation of this material in the lymph spaces of the cornea. Up to that point the physiological action is all right; after that the action of ice is doubtful.

The continuous irrigation of the eye with a mild solution of formaldehyde may be all right, if you have the germs on the surface and they have not yet become imbedded in the mucous membrane.

If you use nitrate of silver and wash that off with a salt solution and then apply argyrol following that, you have done a thing that is all right; but it is a very great mistake to use a nitrate of silver solution in the eye, and continue too freely from day to day, because you are constantly breaking down the epithelium.

Now as to the physiology of this, I want to say: It was early found that if you simply coagulate food matter in the stomach and the alimentary canal, it will not be absorbed; you have to pass it through a process of transformation, from simple coagulum to a really soluble proteid, and this soluble proteid is only reached when you have dissolved the proteid matter and brought it into the form of an albuminoid, which can be brought into solution, then it can be taken up; it cannot be, otherwise. The reason why they can use argyrol and protargol is that they are organic silver salts and do not produce coagulation in the mucous membrane, being proteid combinations they penetrate, while nitrate of silver produces a coagulum which, remaining anywhere close to twenty-four hours, should not be repeated until that pellicle has been thrown off. That is why argyrol, protargol and silvol will penetrate the mucous membrane of the eye and destroy the micro-organism that has gotten inside the tissue. The use of nitrate of silver primarily, in the case of an infant just born, is all right. It is a good thing, because at that time whatever germs are present are presumably and are necessarily right upon the surface, and your nitrate of silver will destroy them; and when that eye is washed out, after the use of the nitrate of silver, the chances are the germs are gone. But you must never leave any nitrate of silver solution in the hands of the parents and nurse to use. Attention was called to that point by Dr. Broyles and some of the rest. All of these things are good; all of them are right; some better than others. Some things we can do and do with impunity. We can use fully the silver salts that penetrate but do not coagulate, but we cannot use nitrate of silver that way.

One more thing about ice. Ice in the hospital is different from use of ice in the average home, just as different as can be, and you cannot treat these patients as a rule in hospitals, and the average practitioner throughout the country, away from the centers, has not a hospital and has not a trained nurse. The doctor who has suggested the use of ice, and then returns to see his patient, finds the child, the pillow, the bed and everything wet. That will never do. The child is chilled, his resistance lowered, the condition about the eyes increased, with the possibility of other trouble, and you may go on and lose the child's eye and perhaps the child too, and the practice of the family,—lose it all, with ice. Heat is all right after the pus starts, and is good. It will relieve them, as Dr. Broyles said; the reason is that it causes an in-

tense pouring out, and that is why you use the heat, it relieves the congestion in the tissues.

DR. N. C. STEELE: I note that Dr. Herron quotes what I said in 1904 as to the use of heat instead of cold in purulent conjunctivitis. I stick to that yet. And also, that silver nitrate was my "sheet anchor" in this disease.

I still say that also, with this qualification; use it in the later stages and not in the primary stage. If I did not say this then I should have said so. Dr. Reynolds, of Louisville, says that it has been proven in hospital work in Louisville that a simple cleansing wash in this disease in babies is the best treatment—a boric acid solution or normal salt solution simply to cleanse the eyes, which should be done often. He insists that it is not necessary to use silver nitrate or any similar drug. I would not use silver nitrate for the first week, but have had magical results with it after the first week.

In adults I should do an external canthotomy in all severe cases. Then keep the eyes clean with a fifteen grain to the ounce aqueous solution of boric acid or an aqueous solution of silvol of the same strength.

A word about the claim that argyrol and similar remedies are good because their solutions sink into the conjunctival sulci and float out the pus. I have seen that argument for argyrol stressed before. That impression is produced because the solution being dark you can see the pus floating on it and carried out of the eye by it. Boric acid in saturated solution will do the same thing, but because of its lack of dark color you will not so easily note the pus floating out on it.

I think well of the doctor's advocacy of silvol and shall use it more and more.

DR. WILLARD STEELE: I do not want to discuss the treatment of purulent ophthalmia, but the prognosis. The prognosis in children is always good; the prognosis in adults is always doubtful. I have always wondered why it was so. You know that an infection from an old gonorrhoeal case is never so violent as a fresh infection; and I think it is true that a child, when born, becomes infected by an old strain, and for that reason the effect is not as violent, therefore the prognosis is better; while in the infection from adults, the infection is usually from a recent case and the violence is severe and prognosis bad. I would like to hear the doctor speak of that in closing.

DR. MOORE: Dr. Steele, in mentioning the question of cleanliness, stole from me a remark I had been cherishing and expecting to make in that connection. I would like to say that is the least carefully carried out part of the treatment of gonorrhoeal ophthalmia. I think it almost invariable in this part of the country that cleansing of the eye is inefficiently done. I do not myself know any nurse of this city that is accustomed to clean up an eye properly. I do know one person that I had that now suffers some degree of loss of vision fol-

lowing an attack of ophthalmia neonatorum, as the direct result of certain things that the nurse did or rather did not do and I do believe that the most of the eyes lost in gonorrhoeal ophthalmia are lost as the result of inefficient cleansing and injury done in attempts on the part of a person that does not know how to cleanse an eye. It is absolutely impossible, of course, that the physician cleanse the eye each time that the cleansing is necessary. It is very frequently, usually a member of the family, who does the nursing. You cannot get them to have nurses always, nor have them in the hospital. I think in these cases the chances are infinitely reduced by the situation.

DR. HERRON (closing): I didn't expect to convert anybody with regard to the treatment of these cases. I don't think the first case should be considered in the treatment of one of these cases, or any violent case, no matter what it is. Would you like to have the treatment that you are going to have imposed on your patient imposed upon yourself? When I go back for twenty-five years and consider the treatment of ophthalmia in its various stages, and I see different men, who have had wider and more varied experience than I have, condemn one treatment, that once in their own minds, probably, was the treatment, that is, nitrate of silver, I am compelled to say that I am not going to use nitrate of silver, and if I have a case of gonorrhoeal ophthalmia, which I may have from infection in some way, there is not a man living can treat me with nitrate of silver, and there is not a man living can treat me with ice. I have made up my mind firmly in that respect. Some people get results from ice, and some from nitrate of silver. I have used nitrate of silver until these other preparations came into use, and I have abandoned it, for the reason that I believe if it is not used very carefully it is a dangerous preparation. And I am the same way with ice. I never use hot applications, when I take these cases in the beginning. I use a mild preparation of boric acid frequently, and as I advance in that case, after several days' treatment, I use a warmer or hotter preparation of boric acid and gradually bring that patient up to it, and I find it is more pleasant and comfortable to the patient. You can go back and compare the statement that I have made in my paper, by Dr. Miles Standish, as you know the authority of the man. Then go back to the Gardner building and get the record of these cases, and compare them; and we must lay some stress on the treatment of those cases, if we believe the statement of Dr. Standish. After considering all these treatments and the various preparations, I have summed it up that if I were to have a case of gonorrhoeal ophthalmia from infection I would use silvol. I don't say that protargol or argyrol would not do. I don't believe there is much germicidal power in argyrol. I once believed it. You must kill the gonococcus if you wish to control these cases. I had no smears made, because it was not convenient at the time. This young man had a

case of gonorrhoea. There is something about these cases that is designated to me in the beginning.

DR. _____: How do you know he had gonorrhoea?

DR. HERRON: He told me so, that he had had it for four years. He was treated by a very competent man. I knew the man. He was using an argyrol 5 per cent solution in the eye. He came to me, and I asked him the question, before I did anything at all, "Have you gonorrhoea?" He said, "I have, I have had it four years, and I cannot be cured." And if I had a case of gonorrhoeal ophthalmia, I would use mild preparations of boric acid,—not hot, and not extremely cold, but medium, and then I would use silvol, 10 per cent solution,—not 20 per cent or 40 per cent, because I believe that the 10 per cent solution is the best. Why do I know? Right in this paper I have the pamphlet of Parke Davis & Company—and we are compelled to admit that those men are reliable. It is taken from the laboratory and I laid stress on it, and it means something. If they tell me that a 10 per cent solution of silvol will kill a gonococcus in one minute, I believe it. I have no way of telling, but I do know that if you will use silvol and use it say three or four hours, or alternated with protargol. I don't believe that I would like to have silvol upon myself alone. It was the irritating effect that protargol had on this patient that aroused me to it. You go to see patients and they complain for hours after using ten per cent solution of protargol, for it burns them for two or three hours. Then you begin to look for something that will not burn them, if it is as good.

THE VOLUNTEER MEDICAL SERVICE CORPS.

For the purpose of completing the mobilization of the entire medical and surgical resources of the country, the Council of National Defense has authorized and directed the organization of a "Volunteer Medical Service Corps," which is aimed to enlist in the general war-winning program all reputable physicians and surgeons who are not eligible to membership in the Medical Officers' Reserve Corps.

It has been recognized always that the medical profession is made up of men whose patriotism is unquestioned and who are eager to serve their country in every way. Slight physical infirmities or the fact that one is beyond the age limit, fifty-five years, or the fact that one is needed for essential public or institutional service, while precluding active work in camp or field or hospital in the war zone, should not prevent these patriotic physicians from close relation with governmental needs at this time.

It is intended that this new Corps shall be an instrument able directly to meet such civil and military needs as are not already provided for. The General Medical Board holds it as axiomatic that the health of the people at home must be maintained as efficiently as in times of peace. They must be met in spite of the great and unusual depletion of medical talent due to the demands of field and hospital service.

In fact, and in view of the prospective losses in men with which every community is confronted, the General Medical Board believes that the needs at home should be even better met now than ever. The carrying of this double burden will fall heavily upon the physicians, but the medical fraternity is confident that it will acquit itself fully in this regard, its members accepting the tremendous responsibility in the highest spirit of patriotism. It will mean, doubtless, that much service must be gratuitous, but the medical men can be relied upon to do their share of giving freely, and it is certain that inability to pay a fee will never deny needy persons the attention required.

It is proposed that the services rendered by the Volunteer Medical Service Corps shall be in response to a request from the Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the Public Health Service, or other duly authorized departments or associations, the general administration of the Corps to be vested in a Central Governing Board, which is to be a committee of the General Medical Board of the Council of National Defense. The State Committee of the Medical Section of the Council of National Defense constitutes the Governing Board in each State.

Conditions of membership are not onerous and are such as any qualified practitioner can readily meet. It is proposed that physicians intending to join shall apply by letter to the Secretary of the Central Governing Board, who will send the applicant a printed form, the filling out of which will permit ready classifications according to training and experience. The name and data of applicants will be submitted to an Executive Committee of the State Governing Board, and the final acceptance to membership will be by the national governing body. An appropriate button or badge is to be adopted as official insignia.

The General Medical Board of the Council of National Defense is confident that there will be ready response from the physicians of the country. The Executive Committee of the General Medical Board comprises: Dr. Franklin Martin, Chairman; Dr. F. F. Simpson, Vice Chairman; Dr. William F. Snow, Secretary; Surgeon General Gorgas, U. S. A.; Surgeon General Braisted, U. S. Navy; Surgeon General Rupert Blue, Public Health Service; Dr. Cary T. Grayson; Dr. Charles H. Mayo; Dr. Victor C. Vaughan; Dr. William H. Welch.

MISCELLANEOUS

ASCENDENCY OF THE AMPOULE.

As evidence of the favor with which the medical profession has come to regard the aseptic ampoule, it is worthy of note that Parke, Davis and Co. now supply in this form more than eighty sterilized solutions for hypodermic use. The fact is significant when it is remembered that the "ready-to-use" solution is distinctly a modern institution, having its introduction in this country less than ten years ago.

Solutions in ampoules, it is obvious, have several advantages over those prepared in the ordinary way. They are ready for immediate use, any time, anywhere, there being no necessity to wait until water can be sterilized and cooled. Accuracy of dose is insured, each ampoule containing a definite quantity of medicament. The solutions are aseptic; they are permanent.

Parke, Davis and Company publish an "Ampoules" brochure, a valuable little book of seventy pages, giving a list of their sterilized solutions, with therapeutic suggestions, dosage, descriptions of packages, prices, etc. The work contains a useful therapeutic index and an informing chapter on hypodermic medication in general. Physicians and surgeons are advised to send to the Detroit laboratories of Parke, Davis and Company for a copy of the book, requests for which are invited.

THE SCIENTIFIC PROGRAM.

As will be seen by referring to the "Preliminary Program" on page 456 of this Journal, there is yet room for some more good papers. The time is getting short and the Program Committee cannot "wish" a program. Some of the members of the Association must agree to furnish papers. A great many of them are capable of good writing and have had the experience from which material can be drawn for instructive essays. The program will be finally closed on March 25th since that is the latest day on which offerings can be accepted for inclusion in the official program before it goes to the printers.

Any member of the Association who feels that he has something worth presenting is invited to a place on the program. Send the title of your paper, if you will read one at Memphis, to the Secretary at once.

A MORATORIUM DURING THE WAR.

Tennessee State Medical Association,
349 Doctors' Building,
Nashville, Tenn.,
Gentlemen:

This Committee wishes to announce that advice has been given to the daily press that Senate Bill No. 2859, providing a moratorium for soldiers and sailors during the War, and unanimously passed the Senate in the same form that it passed the House.

We urge you to advise your readers and also the Medical Societies to have the members immediately procure a copy of this bill and see how it applies to the subject of physician's leases.

This committee has worked for the passage of this bill, and we feel that we have accomplished what we started out to do, and trust that relief will be given the doctors who join the service.

Very truly yours,

R. R. DENNY,

Chairman of the Physician's Lease Committee
of the Chicago Rotary Club.
Feb. 7, 1918.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

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MARCH, 1918

EDITORIALS

OUR NEW ADDRESS.

In the interest of economy and in order that the Secretary may be able to give better attention to the business of the Association, the office of the Tennessee State Medical Association and the Journal office has been moved to 601 Cedar St., Nashville, Tenn. All communications intended for the Journal or having to do with the affairs of the Association should be sent to this new address.

THE EIGHTY-FIFTH ANNUAL MEETING.

The Eighty-Fifth Annual Meeting of the Tennessee State Medical Association will be held at the Gayoso Hotel, Memphis, April 9, 10, 11, 1918. The Association will be called to order promptly at 10 a. m., Tuesday, April 9, by Dr. Willis C. Campbell, Chairman of the Committee on Arrangements. After the usual necessary preliminaries, the Association will be put under the charge of the President, Dr. E. T. Newell, whose Presidential Address will be the first number on the general program.

The Section on Ophthalmology and Otolaryngology will meet on Wednesday, April 10, under the Chairmanship of Dr. Richard McKinney.

The House of Delegates will convene for its first sitting at 2 p. m. on Tuesday, April 9.

All meetings will be held in the Gayoso Hotel.

The Tennessee State Medical Association has had a long and honorable career. None of the eighty-four previous meetings has been more important to the cause of medical organization than will be the coming meeting—the eighty-fifth. At this time, more than ever in

all the years of existence, our beloved Association needs the support of its members. These are times fraught with problems of immense importance bearing upon the interests of all classes and all professions. The problems which must be solved by the medical profession touch the lives of all the people. They can be rightly solved by the concerted action of the best elements of the profession—to be found only in the medical organizations of the various states.

Be on hand at Memphis. Be on hand early and stay throughout the meeting. Help with your presence and your counsel to make this eighty-fifth annual meeting of our Association one which will make its impression for lasting good to our people and our profession.

Your duty lies there—Memphis, April 9, 10, 11, 1918.

PRELIMINARY PROGRAM.

ANNUAL MEETING.

Presidential Address, E. T. Newell, M. D., President Tennessee State Medical Association, Chattanooga.

"Abortion—Its Prevention and Treatment," J. W. Brandau, M. D., Clarksville.

"Kidney Infections—With Reports of Cases," K. S. Howlett, M. D., Franklin.

"The Surgical Management of Chronic Gastric and Duodenal Ulcers," R. L. Sanders, M. D., Memphis.

"Laryngeal Tuberculosis: Its Early Recognition and Curative Treatment," C. A. Robertson, M. D., Ridgeway.

A Paper, H. H. Shoulders, M. D., Nashville. "Complete Intestinal Obstruction from Carcinoma of the Sigmoid and Rectum," W. D. Haggard, M. D., and W. O. Floyd, M. D., Nashville.

"Bloodless Circumcision with Williams' Clamp," G. Victor Williams, M. D., Chattanooga.

"Recent Advances in Neurological Surgery, Especially in the Diagnosis and Treatment of Brain Injuries," William Sharpe, M. D., New York.

"A Discussion of Seven Thousand Industrial Injuries," Duncan Eve, Jr., M. D., Nashville.

A Paper, C. N. Cowden, M. D., Nashville.

"Essential Hematuria—With Report of Case and Review of Literature," R. L. Motley, M. D., Dyersburg.

"Osteomyelitis," E. M. Sanders, M. D., Nashville.

"The Proper Interpretation of Bladder Symptoms," G. R. Livermore, Memphis.

"Some Unsettled Points in the Etiology of Appendicitis," E. H. and J. P. Baird, M. D., Dyersburg.

"Surgery of the Thyroid," J. B. Haskins, M. D., Chattanooga.

"Ununited Fractures," Willis C. Campbell, M. D., Memphis.

A Paper, W. S. Farmer, M. D., Nashville.

"Social Insurance," Wm. Krauss, M. D., Chairman Committee on Social Insurance, Memphis.

A Paper, W. A. Bryan, M. D., Nashville.

"Where Symptoms Differ—Some Findings in Abdominal Work," W. S. Nash, M. D., Knoxville.

A Paper, T. G. Pollard, M. D., Nashville.

"The Surgical Treatment of Varicose Veins of the Lower Extremities," Wm. Sailer Anderson, M. D., Memphis.

"Dropsical Conditions and Their Treatment," G. P. Zirkle, M. D., Kingston.

"Observations on the Use of Beck's Bismuth Paste," Jere L. Crook, M. D., Jackson.

"The Evil Influence of Adenoids and Tonsils on the Dental Arches," O. A. Oliver, D. D. S., Nashville.

"Hysterotomy," L. L. Sheddan, M. D., Knoxville.

"Syphilis of the Stomach—Report of a Case" (With Slides), J. S. B. Woolford, M. D., Chattanooga.

"Syphilitic Induration of the Vulva," J. F. Gallagher, M. D., Nashville.

"The Role of the Carbohydrates in Cardiovascular Disease," C. P. McNabb, M. D., Knoxville.

"A Treatment for Epithelioma," G. C. Savage, M. D., Nashville.

"A New Treatment for Epithelioma," G. C. Savage, M. D., Nashville.

"Pyloric Obstruction in Infants and Report of Cases," by E. J. Johnson, M. D., Memphis.

"Traumatic Stricture of the Larynx," T. Hilliard Wood, M. D., Nashville.

"Prevailing Indications for the Complete Ablation of Tonsils and Adenoids," N. E. Hartsoak, M. D., Johnson City.

"Surgical Disease of the Gall Bladder and Its Treatment," J. Hugh Carter, M. D., Memphis.

"Pyloric Stenosis in Infants, with Report of Cases," E. J. Johnson, M. D., Memphis.

All meetings will be held at the Gayosa Hotel.

The Presidential Address will be the first number on the program and the reading and discussion of scientific papers will engage the time of the general sessions until the program is completed. Twenty minutes will be allowed for the presentation of each paper.

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY.

"How May We Better Conserve Vision? A Special Plea for More Effective Means of Preventing Traumatism," L. M. Scott, M. D.,

"Treatment of Mastoid Disease," J. P. Crawford, M. D., Nashville.

"Some Clinical Observations on Primary Infection of the Mastoid, with Report of Cases," O. Dulaney, M. D., Dyersburg.

"Eye Requirements for Aviators. Report of Findings in the Examination of Several Hundred Applicants," Robt. Fagin, M. D., Memphis.

"Antrum Infection," W. S. Dotson, M. D., Lebanon.

"Some Case Reports," E. B. Cayce, M. D., Nashville.

THE PROSECUTION OF ILLEGAL PRACTITIONERS.

It appears that an idea exists in the minds of many that the Secretary of the Tennessee State Medical Association is, in some way, charged with the duty of prosecuting illegal practitioners in this state. This is not true. For some reasons we wish it were, for certainly the welfare of the public demands that a few honest-to-goodness prosecutions should be instigated. And if he had the authority and the money to work with a few would certainly be instigated.

The State Board of Medical Examiners is the duly constituted agency through which the necessary measures for the protection of the public against quackery and the illegal practice of medicine should be instituted. Every complaint of violation of the laws governing the practice of medicine in the state should be registered with this Board. Every complaint of this nature which has been registered with the

Secretary of the Tennessee State Medical Association has been promptly referred to the Secretary of the State Board of Medical Examiners. Once or twice acknowledgement of receipt of our communications has been made; the others have brought no reply. The Secretary of the Board of Medical Examiners and other members of the Board have stated to us time and again, however, that the funds at their disposal have been very limited in amount and that the difficulties in the way of successful prosecutions are considerable.

Within the week the Secretary of the Association has brought to the attention of a member of the Board of Medical Examiners a most flagrant violation of the law, giving all available information of a local nature and securing additional information concerning the history of the offender as a law violator in another state. An official letter was immediately sent to the offender by this member of the Board of Medical Examiners and, we are informed, this letter was followed up by a personal visit whereupon the gentleman warned gave a nice little promise that he would be good and immediately proceeded to violate the law some more. After going as far as he liked and making all necessary arrangements to have his work continued through direct evasion of the law, laughing in his sleeve, no doubt, this gentleman then hied him away to his native heath.

It does look like somebody, somewhere, some time, somehow, should be definitely charged with the duty of dealing with men who deliberately and calmly and comfortably break the express, explicit and exact law of Tennessee as it is laid down for the protection of the people against the pernicious practice of quacks and illegal and unprincipled practitioners of medicine and that, having been charged with this duty, should proceed to discharge it.

AN IMPOSITION.

The following extract from the "Ward Notes" on a case in the Central Hospital for the Insane is illustrative of a condition of affairs that demands the thoughtful attention of all reputable physicians and the careful remedial consideration of our criminal courts.

"Patient says he contracted syphilis 6 years ago and afterward had syphilitic

rheumatism and during this attack his doctors gave him morphine. He at once realized that this eased him and admits that he liked the effect of the drug, so that when he got out of the hospital he began buying and taking morphine whenever he could get it. Says he got prescriptions from the following doctors:,,,,, and (colored). Patient says that all these are considered "dope Doctors" in Nashville and that anybody can procure a prescription from them for fifty cents. Patient says that Dr., gave him his last prescription the week before he was arrested. Patient was arrested on Jan. 10th for larceny. Was kept in jail until given trial and brought here. Says that at the trial he was only asked if he was guilty, to which he answered 'Yes.' Patient says that Judge looked at him for a minute and remarked that he did not believe patient was able to work on the county road, when his uncle spoke up and said: 'Judge, send him to the asylum for life.'"

Here is the picture. A man, weak to start on, perhaps, contracts syphilis, suffers its painful effects and receives proper treatment, perhaps, which includes the use of morphine for the relief of pain. Likes the general effect of the drug and continues its use of his own motion and without consulting any physician. The "Harrison law" is passed, making it impossible to secure the drug unless some man with a license to practice medicine will give it to him or will give him a prescription for a druggist to fill. He soon learns where the drug or prescriptions for it can be had for a price and continues to get morphine through all the months since the anti-narcotic law was enacted. Finally, unable to secure money, he commits a petty crime and is hauled into court, where the Judge, deciding in his own mind that the fellow is not strong enough to perform hard labor, decrees, apparently upon the suggestion of a kinsman of the accused, that he shall be sent to the State Hospital for the Insane. And so we find him, with no evidences of insanity, in the Central Hospital for the Insane, the facilities of which are already overtaxed in the effort to care properly for persons who *are* insane and who need the care which this institu-

tion was created to provide for them. He and his kind, victims of their own weakness and victims, many times, of the cupidity of men who disgrace a noble profession by their grasping for money, or victims, mayhap, of the sentimental weakness of physicians who cannot resist the beggings of unfortunate habitues, disrupt discipline in the hospital, produce disorder and dissatisfaction among the patients, compel hospital officials and attendants to neglect their legitimate and necessary duties, and use up the far too meager appropriations provided for the maintenance of the institution.

The hospitals for the insane should be protected—protected against “dopers” and criminals, and protected against the unwise action of courts which send these to the hospitals. These hospitals and society generally should be protected against the “dope slingers” who, by dispensing or prescribing morphine, contribute to the continued delinquencies of unfortunates addicted to the use of this drug. These should be punished—punished by open ostracism upon the part of the reputable medical profession and punished in the courts under the law.

Our hospitals for the insane can but hardly meet the legitimate demands that are made upon them. Their meager funds should not be stretched to furnish food and shelter and raiment for those who are not entitled to their care. The officials of these hospitals should not be made to bear burdens added to the already too great loads they are called upon to bear in the performance of their legitimate duties in order that drug habitues and criminals may be shielded from the normal results of their own indiscretions.

Another observation in this connection: Some of our very reputable physicians would be considerably surprised at the disclosures of hospital records, were they to look into these. Their names appear along with those of men of unsavory reputations as drug dispensers and prescribers. It may be that they have done no wrong and that they have been imposed upon by drug users, but this only serves to emphasize the importance of the exercise of most scrupulous care in dealing with habitues and in keeping their records so that none may question their good faith without successful refutation.

FOR ADVANCED RANK.

COUNCIL OF NATIONAL DEFENSE
Washington.

February 7, 1918.

From—Dr. Franklin Martin, Member of Advisory Commission.

To—State. Committees, Medical Section, Council of National Defense.

Subject—Owen Bill, S. 3748 and Dyer Bill, H. R. 9563.

1. The Owen Bill, S. 3748, and the Dyer Bill, H. R. 9563, creating advanced rank for officers of the Medical Corps were introduced in the Senate and House of Representatives Tuesday, February 5th. These two bills are identical and are similar to a bill passed some time ago whereby advanced rank was granted to medical officers in the Navy. According to the present law the ranks for officers of the Medical Reserve Corps are First Lieutenant, Captain and Major. According to the Owen and Dyer Bills the ranks, in addition to those just noted, are Lieutenant Colonel, Colonel, Brigadier General and Major General. The medical profession has long realized the importance of this advanced standing for physicians serving in the Army, and has felt the great value, to the health and welfare of soldiers, coming through orders given by medical officers of higher rank than those which are now accorded.

2. A recommendation involving the efficiency of the Army, because health is necessary to efficiency, given by a medical officer to a line officer of superior rank fails to carry weight necessary for such an important recommendation. This has been the experience of many officers in the past and has been responsible for this demand for advanced rank. The number in the regular Medical Corps now on active duty is 775. Volunteer physicians in the Medical Officers' Reserve Corps to the number of 12,855 are now on active duty. As you well know, physicians of the highest standing in the profession are now in the military service with the rank of major; the Army, therefore, losing the benefit of their experience and knowledge because of a lack of power to enforce their recommendations. Advanced rank carries with it this power.

3. The value of this patriotic service will be greatly enhanced by the early passage of these bills. If you feel, therefore, that more efficient service will be rendered after these bills become law, will you and your medical friends communicate directly with your senators and representatives, preferably by telegraph, using the "night letter" service, if desired, giving them the benefit of your experience and advice. In matters medical legislators are both willing and anxious to be guided by the wishes of the medical profession. Will you also present this information concerning these bills to the medical societies of your state and city for their consideration and action, such action to be in the nature of resolutions to be forwarded to senators and representatives as an evidence of the recommendation of the profession on this question?

By direction of—

DR. FRANKLIN MARTIN.

COMMITTEE ON STATE ACTIVITIES.

General Medical Board:

VENEREAL DISEASES NOW REPORTABLE IN TENNESSEE.

As a co-operative measure in the effort being made by the Surgeon General of the Army to protect the soldiers of our country from the ravages of venereal disease, as well as for the protection of our civil population, the following order has been issued by the Secretary of the Tennessee State Board of Health:

February 20, 1918.

To Municipal and County Health Officers of the State of Tennessee:

Gonorrhoea and Syphilis being dangerous and highly contagious diseases that have and are now proving the most serious menace to the citizens of Tennessee, and more especially to the enlisted Army and Naval forces of the Nation, it is hereby ordered that all County and Municipal Boards of Health are required to report these diseases under Section 11, Chapter 519 of the Acts of 1905.

It shall be the duty of each and every Municipal and County Board of Health in this State, upon receiving information of the existence in their respective jurisdictions of gonorrhoea and syphilis, the same being communicable diseases and dangerous to the public, to notify the State Board of Health of the facts,

and on the first day of each and every month to make a written report and forward same without delay to said Board for the last preceding month, setting out in said report in separate column the age, color and sex of the individual and the name of each said diseases with which he or she is afflicted; also the number of cases, the number of deaths therefrom, and such other information as may be necessary to protect the public health.

STATE BOARD OF HEALTH.

By R. Q. LILLARD,

Secretary and Executive Committee.

UNREPORTED COUNTIES.

There are yet several county societies from which no 1918 reports have been received. The time for the annual meeting is almost upon us. The Secretary is extremely anxious to go before the House of Delegates at Memphis with a full report and one that will show the old Tennessee State Medical Association in strong position, in spite of the heavy inroads made upon its membership by the demands of the war. We appeal to the Secretaries of all societies not yet reported to send, and send at once, full reports for 1918.

There is every reason why the membership of the Association should be held up to the highest possible number in this time of world-wide stress. Now is *the* time for medical organization to show its possibilities for service to the Nation, the State and the Profession.

RECIPROCATING WITH TENNESSEE.

Memphis, Tennessee,

January 29, 1918.

To the Editor of the Tennessee State Medical Journal, Nashville, Tennessee:

Dear Sir—Thinking that perhaps the members of the medical profession in our State would be interested to know the states with which Tennessee has an agreement as to reciprocal licensure, I take pleasure in announcing that the following states recognize our licenses: Alabama, Arkansas, Georgia, Mississippi, North Carolina, Virginia, Maryland, West Virginia, Oklahoma, Texas, Kansas,

Missouri, New Mexico, Utah, Colorado, Wyoming, Nebraska, Indiana, Wisconsin, Pennsylvania, Maine, Michigan, Minnesota, and in special cases with California, New Jersey, and New Hampshire.

In the event that any member of the Tennessee profession desires licensure in any of the states above denominated, our Board will take pleasure in giving any information desired. Yours very truly,

A. B. DeLoach,

Secretary State Board of Medical Examiners.

The Journal has, from time to time, published a list of the states maintaining reciprocal relations with Tennessee and is very glad to have this official statement from Dr. LeLoach. We hope our members will preserve this for the information it contains.

THE EIGHTY-FIFTH ANNUAL MEETING.

At Memphis.

April 9, 10, 11.

Gayoso Hotel.

Ten a. m. Tuesday, April 9.

That's what, where and when.

Who? About four hundred of the best doctors in Tennessee. Be one of 'em.

Be on hand at the start and stay to the finish. Bring your wife. There'll be lots of ladies there.

DR. E. M. HOLMES.

Dr. E. M. Holmes, of Murfreesboro, died at the Woman's Hospital in Nashville on January 19, 1918, after an illness extending over a number of months. Dr. Holmes had long been one of the most interested members of the Tennessee State Medical Association and had served the Association as Vice President and in other important positions. He had also served as President of the Middle Tennessee Medical Association. At the time of his death he was a member of the Rutherford County Medical Society. Dr. Holmes began the practice of medicine at Readyville, from which place he went to Murfreesboro a few years ago. Shortly before his death he had accepted an appointment as As-

sistant Superintendent of the Central Hospital for the Insane, but died before he could take up this work. He is survived by his wife and two children. In the medical profession of the state Dr. Holmes had many friends, and among the people of his county he was held in high esteem as a physician and as a man.

DR. JAMES G. WILLIAMSON, JR.

Dr. James G. Williamson, Jr., of Columbia, died at Asheville, N. C., on February 4, 1918. Dr. Williamson was the son of an honored physician, Dr. J. G. Williamson, Sr., and a brother of Lieut. G. C. Williamson, one of the surgeons of the 114th Field Artillery, and all of them active members of the Tennessee State Medical Association. Dr. Williamson's wife, formerly Miss Margaret Frierson, and one little daughter survive him. His home was at Columbia.

Dr. Williamson was a young man of most lovable traits, with many friends and with brilliant prospects for a notable career in the practice of medicine. His death has brought great sadness to all who knew him.

NOTES AND COMMENT

April 9, 10, 11, 1918.

Memphis, Shelby County, Tennessee.

Gayoso Hotel, Main street—right in the middle of things.

Beginning at 10 a. m. Tuesday, and moving all the time until afternoon Thursday.

The Eighty-Fifth Annual Meeting of the Tennessee State Medical Association is what we are talking about.

Are you getting ready for it? If not, why not? Don't be a slacker. Be in Memphis Tuesday morning, April 9, prepared to stay until Thursday evening, April 11.

It will take more than a world wide war to keep this from being a good meeting if you will do your part.

The total number in the Medical Reserve Corps on February 1, 1918, has been reported as 16,637. Of these 919 were majors, 3,595 captains, and 12,173 lieutenants. In addition, approximately 5,000 others had been recommended for commissions.

A gratifying number of Tennesseans have been recommended for promotions in the Medical Reserve Corps.

Yes, we know the weather has been bad, but the mails have been moving, you know the address of your Secretary and your little check for annual dues should have been sent in long ago. Don't put it off any longer.

Are you making your plans to attend the Memphis meeting? If you are not, you must. You will be needed there and it will help you to be there.

Dr. Harry Friedman, Nashville, has entered the Medical Reserve Corps of the Navy, having taken the required examinations in New Orleans in February.

Lieut. Dabney Minor, M. R. C., Cleveland, has been taking a course at the Massachusetts General Hospital and will be sent to Camp Green for duty.

Lieut. D. C. Haggard, M. R. C., Unionville, is on duty at American University, Washington, D. C.

Maj. V. K. Earthman, M. R. C., Murfreesboro, has been assigned for duty at Camp McArthur, Waco, Tex.

Lieut. I. J. Tatum, M. R. C., Gleason, is at Camp Greenleaf, Ft. Oglethorpe, Ga.

Capt. Jno. M. Lee, M. R. C., Nashville, has been ordered to West Point for duty.

Lieut. J. M. Oliver, M. R. C., Portland, is on duty at Camp McArthur, Waco, Tex.

Lieut. Glenn Bartlett, M. R. C., is at the training camp for medical officers at Ft. Oglethorpe.

Lieut. Leopold Schumacker, M. R. C., Chattanooga, has been ordered to Camp Greenleaf, Ft. Oglethorpe, Ga.

Capt. B. C. McMahon, M. R. C., Memphis, has been ordered to Washington University, St. Louis, for a course of special instruction.

Dr. William Sharpe, New York, a man of distinguished ability, will be the guest of the Association at Memphis, and will present an address on some of the phases of neurological surgery.

A relatively large number of our 1917 members have not paid dues for 1918. It is to be hoped that every one of these who reads this note will send—at once—his dues to his County Secretary.

Lieut. G. E. Campbell, M. O. R. C., Elizabethton, has been assigned to duty at Wilbur Wright Field, Fairfield, Ohio.

Lieut. L. S. Neese, M. R. C., Del Rio, is on duty at Camp Upton, Long Island, N. Y.

Lieut. G. M. Allison, M. R. C., Mayland, is at the training camp for medical officers at Ft. Oglethorpe.

Lieut. Enoch Seale, M. R. C., Nashville, is at the medical officers' training camp at Ft. Oglethorpe.

Capt. Louis Levy, M. R. C., recently on duty at Portland, Oregon, has been assigned to duty with the Aviation Section, Signal Corps, at Memphis.

Lieut. A. E. Goodloe, M. R. C., Murfreesboro, has been ordered to Fort Monroe, Va., for duty.

Capt. J. B. Hibbitts, M. R. C., Union City, is at Camp Greenleaf, Ft. Oglethorpe.

THE JOURNAL

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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

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TUBERCULOSIS WITHIN THE ABDOMINAL CAVITY—WITH CASE REPORTS.

By W. O. FLOYD, B.S., M.D.,
Nashville, Tenn.

Tubercular infections within the peritoneal cavity have, for more than a century, been known to exist. Louis, nearly a hundred years ago, recognized tuberculosis as being responsible for most cases of chronic peritonitis, but it remained for Wells, in 1862, who operated upon a localized collection of fluid, thinking it to be an ovarian cyst, to pave the way for the many cures which have been accomplished since that time.

Simple laparotomies, however, constituted the surgical procedures upon these conditions up until about the beginning of the present century, when, about this time, patients returning with a reaccumulation of fluids or other symptoms, led Murphy, in 1904, to conclude that cure was obtained only in those cases in which the source of supply of the infection had been cut off from the peritoneum by the formation of adhesions, due to direct contact of the infected tissue, usually the tubes, with other viscera, after the removal of the fluid by simple laparotomy, thus completely exploding the air, sunlight, drainage, irrigation, antiseptics and other theories as to cure, which were held at this time. But it remained for Mayo to systematically trace up his own cases that relapsed and upon secondary operation to actually remove the diseased tissue and thus, in connection with Murphy's conclusion, to establish the present day conception of radical removal of the focus of infection.

I was somewhat surprised, in looking up the literature on this subject, that even our present day text-books scarcely more than mention this subject, while the other literature, as a rule, consists mostly of a very limited number of case reports, one of the largest of which was that of Kayser of Hamburg, who, in 1914, reported 81 cases operated upon. To this report, as well as some by Mayo, Murphy, Deaver and others, I will refer later.

In connection with this paper, I wish to report in general and somewhat in detail some observations and results in thirty-six cases which it has been my fortune to observe during my association with Dr. Haggard.

Thirty-five of these cases having been operated upon and one, which was practically moribund when he came into the hospital, was further observed at post-mortem. This was a male patient about 27 years of age. The special points of interest in his case were that he gave a typical story of duodenal ulcer, for which he had been explored elsewhere four weeks previously, although he had had a persistent watery diarrhoea for ten days previous to his exploration, which diarrhea continued until death four weeks later. Exploration revealed a general tuberculous, fibrinous, adhesive mass. The patient vomited everything taken following exploration, and when we saw him four weeks later he presented, among other symptoms, the so-called typical "wooden," or board-like distended abdomen, so well described by Mayo in these cases of general abdominal tuberculosis, and died in about two days.

In going over the records in these cases, I find many interesting points in common with the reports of others, while I also find many points that do not coincide with the experience

of others. Many of these I will attempt to enumerate somewhat in detail.

Many writers claim that abdominal tuberculosis is nearly always secondary to a tuberculous focus elsewhere, especially to that of lung involvement, while others, as Mayo, believe that a very large percentage are primary and are contracted by means of foods and especially from the raw milk of tuberculous cattle. To prove his contention, he cites two examples: First, that a large per cent of these cases are seen in country people where pulmonary tuberculosis, comparatively speaking, is not so common as in the cities, but where raw milk is a more common food than in the cities. And second, that the children of Heidelberg, who were so notoriously tuberculous, have in recent years been almost entirely freed from tuberculosis by the pasteurization of the milk, which kills the tubercle bacilli.

Of our thirty-six cases, twenty-five, or seventy per cent, lived in the country and seven had lived in both the city and country, while only four had always lived in the city. Also, only fourteen of our thirty-six cases, or forty per cent, gave any evidence of lung involvement. Both of these facts, to my mind, tend to show that tuberculosis in the abdomen may be a primary infection.

Neff, in 1902, claimed that the mortality of the operation was about three per cent. We had no deaths in our series of thirty-five cases operated upon, while Mayo in one report had 29 tubercular appendectomies and in another report 12 tubercular cecums resected, and in still another report 26 tubes and ovaries removed, or a total of 67 cases, without a death. Neff also claims that tuberculous infection of a wound does not occur, but we have had three cases, one of which persisted for more than a year, while another died of mixed infection from the wound and sinus, and the third we have only recently healed by means of the X-ray. I have also seen wound infections from the removal of tuberculous kidneys.

Most writers agree that this condition is a disease of childhood and young adult life. I have never seen a case in a child, our youngest case being 18 years of age and the oldest being 57. Twenty-one, or 58 per cent of our cases, were between the ages of 20 and 30; 10 were between

30 and 40, while only three were over 40; the average age being 28.

Twenty-eight of our cases were females and eight were males, but 21 of the females had the tubes involved, which left the ratio of 8 to 7 in favor of the males when considering the involvement of the appendix and intestines only, which is in keeping with Murphy's observation, but is not nearly so high as the ratio of three to one in favor of the males as claimed by some writers.

Another point of interest relative to the female patients are the facts regarding pregnancies. In the married women, some writers claim that pregnancies rarely occur, while others maintain that all women with tuberculous tubes and peritoneum remain sterile. In our series of 28 females, 19 were married and 10, or more than 50 per cent, had borne children. One of these had borne a child 4 years after symptoms of tuberculous salpingitis had appeared, and another one first noted her symptoms after labor, which, principally, were pain and failure of the abdomen to go down after labor. Four months later we removed a nineteen-pound ovarian cyst and tuberculous tubes. Still another developed a toxemia of pregnancy with convulsions about the seventh month and had to have a premature labor induced, after which she never recovered until we removed tuberculous tubes five months later, despite the fact that she had spent several weeks at Battle Creek Sanitarium in the meantime.

The relative frequency of abdominal tuberculosis is another point discussed by some writers, but more especially with reference to the appendix and cecum. Deaver, in 1913, noted that he had encountered 16 cases during the previous 15 years among 7,600 cases seen, or about one to every five hundred cases, but he did not state that the abdominal cavity was opened in all of the 7,600 cases seen. In the period of our thirty-six cases the peritoneal cavity had been opened in a little over 2,000 instances, thus giving about one case of abdominal tuberculosis in every 60 cases opened. However, relative to appendices alone we encountered nine cases in something over 800 appendectomies, or about 1 per cent of all appendectomies performed, which is in close keeping with Murphy's records of about 1 per cent of all his appendices being tuberculous. In Mayo's report of 54 cases of tuberculous appen-

dices in 1913, he stated that this was about 1 per cent of all appendectomies performed during the period covered by this report, which also included 29 cases previously reported, in which report he estimated the frequency of tuberculous appendices as occurring in about 10 per cent of all cases.

In speaking of tuberculous appendices some writers claim that the appendix infection is always secondary to the cecum involvement, but we have had five cases out of our nine appendices in which there was no evidence whatever of cecal infection, which is also in accord with Mayo's conclusions on this point. It is, however, a well known fact that the appendix may be secondarily involved from the cecum, or even from diseased tuberculous adnexa. Murphy cites four cases out of seven tuberculous appendices of this nature in which the appendix was caught in the tuberculous process of the adjacent tubes and ovaries. We have had one such case in a married woman 27 years of age, who was without children and who had had symptoms for five years and whose peritoneum was not involved at the time of operation, which fact to my mind should very strongly suggest the fifth way of the infection being disseminated, namely, by "direct contact," the other four well-recognized ways being by the bowel, the peritoneum, the blood stream and the lymphatics.

According to many of the pathologists we have abdominal tuberculosis manifesting itself in two distinct varieties, the usual ulcerative or caseous variety, and the less common form which is characterized by a massive tissue production, the so-called hyperplastic or hypertrophic form, most frequently seen in the cecum, and, as Mayo says, extremely difficult to differentiate from malignancies of this portion of the intestine. To this Murphy would add a third form, this is that form manifesting itself in peritoneal tubercles. This type is usually associated with ascites, the fluid usually being a clear straw color, or occasionally it may be hemorrhagic, and has long been recognized by the surgeon as the most favorable type for surgical interference, while Billings claims that operation upon the ulcerative and fibrous forms is equivalent to signing the death certificates for these patients.

Of 35 cases operated in our series 19 had ascites, while 10 did not, and in one case the records did not show whether ascites existed or

not, while 4 cases were suppurating and were drained. Of our nine cases living and well at the end of four years or more, six of them had ascites and none of them were drained.

Symptoms. The duration of the symptoms varied from three months to fifteen years, the average length of time being a little over three years, although in nine cases, or 25 per cent, the symptoms had existed for less than one year. The case of only three months' duration was a single woman 22 years of age, who came with what appeared to be an acute, recurrent attack of appendicitis. Operation revealed only a tuberculous peritonitis, there being no evidence of any tuberculous involvement of the tubes, ovaries, intestines or appendix. Three years later we operated on this case again for an acute intestinal obstruction, at which time there was no evidence of tuberculous involvement in the peritoneum or elsewhere, save for the adhesion which was producing the obstruction. This case is now well at the end of two years and is in contrast to Mayo's idea, in 1914, that all tuberculous peritonitis cases are secondary to tubercular foci elsewhere in the abdominal cavity.

Pain, along with temperature, was one of the most constant symptoms. It was complained of in 30 cases. Only three cases did not complain of any pain or abdominal discomfort, while the records did not mention this point in three other cases. The pain varied all the way from an abdominal discomfort at times to that of a sharp, acute, abdominal colic, requiring morphine for relief. Many cases, however, complained more of some other one symptom than pain, while in three cases the pain was severe, constant and was by far the predominant symptom.

Thirty-one of our cases were running temperature, from 99 to 104, when seen. Three cases had no temperature record taken, while the two remaining cases had a variance from normal in the afternoons to a subnormal in the mornings, which Murphy claims is quite suggestive of some tuberculous foci.

Nausea and vomiting were noted in 19 cases, while six had no vomiting, a ratio of three to one. In the remaining 11 cases the records did not mention this symptom.

Leucorrhoea was present in 16 of the 28 women, and in 14 out of 21 cases of tubal involvement it was very profuse. In one case it

had been very profuse for seven years, while it was the most prominent symptom in four others of these cases.

Menorrhagia was present in 10 of the 21 salpingitis cases, or about 50 per cent, being the most prominent symptom in three cases, while in another, a single girl, 23 years of age, it was the only symptom complained of.

Night sweats were complained of in seven cases, while eight did not; a few cases had some cough, and a small percentage gave a family history of tuberculosis.

One case, a single woman of 26, came five years ago with a diagnosis of subacute appendicitis after having been confined to bed with temperature for six weeks. We diagnosed a tubercular peritonitis, but to rule out typhoid we had a Widal made which was positive, although this patient had not previously had typhoid. After a few days in the hospital the Widal was negative, and again we thought the case one of tuberculous peritonitis, but on the day of operation the Widal was positive again. However, we found at operation tuberculous peritonitis and salpingitis. This case is, also, one of two which after operation developed a sinus or fistula through which the patient menstruated at each period for more than a year, when we finally dissected out the fistula and also removed the remaining ovary, a tubercular mass, which was left apparently healthy at the first operation. This patient is still living and has since married, although we had to do a third operation some months ago to evacuate a large abscess in the left inguinal region, which was proved to be sterile on culture and whose origin was undetermined.

The differential diagnosis is often very difficult. Graham claims intestinal tract tuberculosis is extremely so, as these conditions may simulate any condition within the abdominal cavity, the most common of which are: acute appendicitis, three of which we have had, stomach lesions, gall bladder troubles, duodenal ulcer, one case of which I have already mentioned, and especially malignancies of the intestines and Neisserian infections of the pelvic organs in the female.

I remember especially one other case of interest from a diagnostic standpoint, a lady, married, thirty-three years of age, who had borne eight children, the youngest of whom

was only six months of age, and who had had symptoms for sixteen months. The diagnosis was not clear, but the stomach was suspected. X-ray proved it to be negative, but did show gall stones and pulmonary tuberculosis. We were surprised to find a double tuberculous salpingitis when the pelvis was explored at the operation for the gall stones. The patient's lung symptoms begin to clear up immediately and she is still living and doing very well.

At operation, 17 of the 36 cases had a tuberculous peritonitis, this being the only involvement in one case already mentioned. In 13 cases the peritoneum was not involved, while the records were not clear in the six remaining cases.

As already stated, the tubes and ovaries were involved in 21 cases and the cecum and appendix in nine, while in one case the mesenteric glands seemed to be the seat of the primary foci, while the small intestine seemed to be the victim in two cases and *everything* was involved in the two other cases. In the case of glandular infection the patient was a male, about 25 years of age, diagnosed appendicitis, in which the normal appendix was removed, only, as a precaution, but ramifying among all the intestines, as a love vine among clover, from the appendix area to the liver, were great masses of yellowish tubercular tissue, which was mostly all removed. The patient is still living after three years and doing well.

Operation. In every instance the primary focus was removed when it was permissible to do so, whether appendix, cecum or tube. In a few cases one ovary was left where the tubes and ovaries were involved, later one of which has had to come out.

Drains were placed in only four cases, all of which were suppurating at operation. Of these, three are dead, one is living and well.

Fecal fistula developed in three cases; all are dead.

Schmidt, in 1913, reported 38 cases, 23 of whom, or 61 per cent, were cured, no time being mentioned. Two were moribund and ten are since dead. Of his 24 cases not drained, 19, or 80 per cent, were still living.

Kayser, in 1914, in reporting 81 cases, had 48, or 59 per cent, still living. Kayser also had 29, or 26 per cent, still living after four years, while of the cases we have been able to trace,

9, or 26 per cent, also are still living, more than four years. This does not include 4 cases which we are unable to trace, 3 of which have been operated upon for more than four years.

Of the 26 cases with lung involvement reported by Kayser, 10, or 40 per cent, were cured of the lung symptoms. This was quite a surprise to me, but when I began to look up our cases, I found that 3 out of 9, who are well for more than four years, had lung symptoms at the time of operation. We have also had two cases this year in which the cough and chest symptoms have subsided after removing a tuberculous appendix and cecum in one case and a tubercular kidney in the other. The last and very interesting case was a married woman of 29, without children. First came under our observation for acute intestinal obstruction, as a result of an operation elsewhere for tubercular tubes, two and one-half years previously. During her convalescent period from obstruction, as a result of bladder symptoms which she had had for three years, we diagnosed and removed a tuberculous kidney, which brings up the question as to whether the kidney was primary or secondary to the tubal infection, or whether, as I believe, both were not secondary to a pulmonary focus.

Of our seven cases known to be dead, two died of pulmonary tuberculosis nine months and three years, respectively, after operation. The patient who only lived nine months was a young fellow with a tuberculous appendix and apparently with lung involvement at the time of operation. Three others died with fecal fistula, one of whom also had a lung focus at the time of operation, and the two other cases died of general abdominal tuberculosis soon after explorations in which no surgery was attempted.

ACUTE PYOTHORAX.

By BENJAMIN BRABSON CATES,
Knoxville.

The treatment of an ordinary collection of pus in the plural cavity has had very little variation for the past quarter of a century. It has been a marvel to me that so little progress has been made in the treatment of this condition, and authors are recommending today the same treat-

ment in such cases as they did thirty years or more ago; that is, removal of a small section of a rib and the insertion of a drainage tube.

Under such circumstances the patient with pyothorax will often have a flow of pus lasting for months and years. Resecting a small portion of a rib and inserting a tube is the most non-sensical method I know of today for treating acute pyothorax, and I never see a surgeon doing it that I do not feel sorry for him and pity his patient. Let us see why. What is pyothorax, anyhow? It is simply a circumscribed collection of pus in the plural cavity. In other words, it is an ordinary abscess. Then, if this is so, why treat abscess of the pleural cavity differently from an abscess in any other part of the body, such as the back or thigh?

A surgeon who would treat an abscess of the cavity of the tunica vaginalis testes by a small incision or a little rubber tube is archaic and on a par with the surgeon who resects one or two inches of a rib and inserts a rubber tube. In the case of abscess of the tunica vaginalis one would make a free incision, drain all the pus at once and insert strips of gauze. Then why not do the same in pyothorax?

The method I have used in pyothorax for 7 or more years is to resect an entire rib back to the posterior angle, evacuate all the pus at one sitting, and pack the cavity with gauze. It is best for several reasons. It gives vent to all the pus, the patient is not wallowing in a pus-saturated bed for days or weeks, nor wearing a tube for years. It gives a good view of the entire cavity. It enables the operator to break down adhesions and discover any secondary pockets and if there is any thickening of the pleura the gauze breaks this down. Finally, it stimulates granulation and obliterates the pleural cavity. There need be no fear of collapsing the lung, as has been suggested, because the lung is already collapsed.

There is one precaution I would call your attention to; that is, if there is a large collection of pus with dyspnea, to draw it off gradually, or, as I have done in a few cases, aspirate and draw off two or three pints the day before the operation, the amount depending upon the extent of the accumulation and the condition of the patient.

By following such a process the surgeon will register a large number of cures, and he will not subject his patient to the possibilities of pleural fistula, thickening of the pleura, and a chronic invalidism and the dangerous and doubtful operations for such conditions.

DRUG ADDICTION AND THE NEW-BORN.

By K. S. HOWLETT, M.D.,
Franklin.

In the December, 1910, *American Medicine*, C. E. Terry, M.D., formerly Health Officer of Jacksonville, Fla., in an article with the above title relates several cases in which infants of mothers who were opium addicts did badly until some form of opium was administered, after which all improved, and upon gradual withdrawal of the drug became normal. One child, he reports, died, who he is sure could have been saved "had the condition been recognized and treatment instituted."

This statement of Dr. Terry would indicate that it would be well to begin the administration of an opiate to all such babies immediately after birth. This being contrary to my own observation, I desire to report one case, in which careful notes were kept.

In this instance both the father and the mother of the baby were addicts, the father having acquired the habit following a severe and painful injury, and the mother having later become addicted to the use of opium, probably because of association more than because of any real need for the drug. At the time the law required addicts to secure permits from the State Food Commissioner before purchases of morphine could be made, and hence the quantity used was accurately known. This mother had been using the drug for ten years. At the time of the birth of this baby she had a permit to buy sixty grains of morphine each week, which was used hypodermatically and which was an amount slightly less than she had been using six months prior to that time.

She was a multipara and had borne one child after having become an addict. This infant

cried so incessantly that the attending physician, suspecting that a tight prepuce was the cause of the apparent discomfort, circumcised the child on the third day. The bleeding after this operation could not be checked, and the baby died after several hours of continuous oozing. This was three years before the birth of the baby which is the subject of this report.

The position was occipito-posterior, the labor long and hard, rotation and delivery finally having been accomplished with the aid of forceps. Following labor, the mother was prostrated and nervous, complained excessively of the after pains and demanded frequent and large doses of morphine, which were given hypodermatically by her husband. She was kept in a drowsy state, almost a stupor, because of the drug, for several days, taking water and other liquids, but eating practically nothing.

The breasts never filled, and after one day's ineffectual effort to feed the baby from the breasts, artificial feeding with diluted cow's milk was begun. Dr. Lucius Brown, State Food Commissioner, who had issued the permit for the purchase of morphine for the mother, and I had discussed the matter, and both felt that unless the drug was furnished through the mother's milk the baby would be, at least, a crving, fretful child, and that it would become necessary, probably, to give it some form of opiate. However, the very opposite was true. The baby, a girl, did well from the beginning in every respect. It was a quiet, "good" baby, grew off promptly, developed satisfactorily and had less disturbance of the gastro-intestinal tract than any artificially-fed baby I have ever had under my charge. She is now four years old, rosy and vigorous, and has absolutely no perceptible neurotic tendency.

This is in accord with my observations in a few other cases, as I recall the facts, and, contrary to the observations reported by Dr. Terry, would not indicate that the infant *in utero* is unfavorably affected by the use of morphine by the mother.

Reports from other physicians as to their observations in these cases would be interesting.

**A WARNING AGAINST OPERATIONS
FOR VARICOCELE ON APPLICANTS
FOR ENLISTMENT, REGISTRANTS
FOR THE SELECTIVE DRAFT,
AND SOLDIERS.***

JOSEPH COLT BLOODGOOD, M.D.,
Baltimore.

To the Editor:—Until recently, varicocele disqualified for military service, and many applicants for enlistment in the Army and Navy and for admission to West Point and Annapolis subjected themselves voluntarily to this operation. Now that varicocele does not disqualify, officers and especially enlisted men who complain of discomfort in the groin and testicles during their physical training may be referred to the base hospitals in the various training camps and cantonments, and subjected to an unnecessary operation for varicocele.

The evidence against operation for varicocele, except in selected cases, is based on these facts: The majority of men suffering with this lesion show, after long observation, that the condition as a rule spontaneously disappears. Varicocele is observed most frequently after puberty and before the age of 21, and as a rule it disappears at about the age of 25, and, with few exceptions before 30.

Those persons who have varicocele are, in addition, neurasthenics, are rarely relieved of their nervous complaints by the operation for varicocele.

In the excision and ligation of the thin-walled dilated veins there is always the danger, even when the greatest care is taken, of hemorrhage, which is followed by thrombosis, hematoma and epididymitis. This complication prolongs the period of disability, and in a few cases atrophy of the testicle results.

Even in those cases in which the operation is properly done and when there is little or no swelling of the testicle, or marked thrombosis of the lower stump of veins, a hydrocele may secondarily develop within a few months or years. The resultant hydrocele is much more annoying than the original varicocele.

When the patient has a hernia and varicocele,

*Reprint from *The Journal of the A. M. A.*, Feb. 9, 1918.

the danger of epididymitis and atrophy of the testicle and secondary hydrocele is much greater if the veins are excised when the radical operation for hernia is performed. I am so convinced of this danger that I never excise the veins of the cord in operations for hernia on children, and only in exceptional cases in operations on younger men. I called attention to this in 1899 in a report on 459 cases of operation for hernia and forty-five cases of operation for varicocele (*Johns Hopkins Hospital Reports*, 1899, 7). On a number of occasions since then, I have written to the surgeons-general of the Army and Navy, giving the evidence against disqualifying applicants for enlistment because of varicocele, and requiring an operation for their acceptance.

In 109 operations for hernia in which the veins were not excised, there was but one case of marked hematoma with atrophy of the testicle. In this case the veins were injured during the operation, and a huge hematoma developed at once. In this group many of the hernias were large, and the sacs adherent to the veins of the cord.

In sixty-one cases of operation for hernia in which the veins were excised by the older method, atrophy of the testicle took place in nine instances, about 15 per cent. In this older method, not only were the veins of the cord completely excised, but the cord was torn from its vascular bed in the inguinal canal.

In the paper already referred to, I described a method of excising the veins in operations for hernia in which the remainder of the cord is uninjured and its vascular attachments to the inguinal canal remain undisturbed; the cord is not transplanted. There are recorded fifty-three such operations without any recorded case of atrophy.

If we group all these cases of hernia in which the veins were excised, there would be 114, with nine atrophies of the testicle, or almost 8 per cent. No hydrocele was observed after operations for hernia in which the veins were not excised, but there were a number of cases of hydrocele, irrespective of the method of excision of the vein.

In sixteen cases of operation for varicocele the incision was made through the scrotum

The results after this older method were traceable in six cases, with the demonstration of one hydrocele and one atrophy of the testicle. When the veins had been excised by the newer method through an incision in the groin, 17 out of 29 cases were followed with no atrophy of the testicle, but there were five hydroceles, almost 30 per cent. Hydrocele, therefore, may follow the operation for varicocele even after the most approved method in which after operation there is no swelling of the testicle or thrombosis of the vein.

I trust that all surgeons who read this warning will not operate for varicocele, except in cases in which the huge size of the vein disqualifies the applicant or registrant for military service, or disables the soldier from further military service. From my long experience, I am confident that the number of these cases will be very small.

Unfortunately, my observations on hernia and varicocele since my publication in 1899 cannot be given in the same exact figures. I have ceased to excise veins in operations for hernia, except in a few cases in older men, and rarely now operate for varicocele. I doubt if I average two cases a year. I have not observed a single case of atrophy, but I have observed about the same percentage of hydroceles.

REPORT OF SECRETARY.

April 9, 1918.

To the House of Delegates, Tennessee State Medical Association.

Mr. President and Gentlemen:

I have the honor, as Secretary of the Tennessee State Medical Association, to offer the following report for the year 1917-1918, ended April 1, 1918. It will be remembered that the membership year ends with December 31 of each year.

The total number of members enrolled during the year from January 1, 1917, to December 31, 1917, was 1,619, as compared with 1,621 in the preceding year, which latter was the largest membership ever recorded. In so far as numbers are concerned, the record for 1917 is very pleasing, but a close analysis of the rolls of the component county societies discloses a most un-

desirable condition, existent for several years and referred to in several previously rendered reports, namely, that a relatively large number of our members are not constant in their affiliation. In many instances members in county societies have grown in numbers but old members have been lost who should have been retained. A review of records will show that men are constantly allowing their membership to lapse for one or more years. Real progress involves not only the gaining of new strength, but also the holding of all that has been gained in the past.

Losses in membership, in actual numbers, were recorded for the year in Anderson, Bedford, Bradley, Campbell, Carroll, Chester, Cumberland, Dyer, Fayette, Gibson, Giles, Greene, Grundy, Hardeman, Haywood, Henderson, Jackson, Jefferson, Knox, Lake, Lincoln, Loudon, Maury, Montgomery, McNairy, Overton, Putnam, Rhea, Robertson, Sevier, Sullivan-Carter-Johnson, Tipton, Warren, and White counties. In some instances these losses, small in number, were due to deaths or removals, but too often were due to lapse of membership.

Gains were reported in Blount, Crockett, Davidson, Decatur, Dickson, Franklin, Hawkins, Hamilton, Hamblen, Henry, Lauderdale, Madison, Marshall, Monroe, Obion, Roane, Rutherford, Shelby, Smith, Sumner, Washington, Weakley and Wilson.

Coffee, Hickman, Macon, Polk, Scott and Williamson counties reported the same number of members in 1917 as were reported for 1916, but in none of these counties except Scott was the entire 1916 membership retained.

Morgan, McMinn and Wayne counties were not reported during 1917. Our information leads us to believe that the organizations in Morgan and Wayne counties are dead and beyond recall, but that the society in McMinn county will be renewed.

One member was expelled by the action of the county society to which he belonged during the year.

Cocke County was organized in 1916, as was Hardin and the new societies in these counties reported for the first time in 1917, with 10 and 9 members respectively. We are truly glad to report that both were prompt to send in reports for 1918 and to express here a sincere hope that medical organization may work great benefits

for physicians resident in these counties and for the profession at large.

It is with pleasure, too, that we are able to report that Unicoi county, unreported in 1916, came back into the fold in 1917.

Reports were received for 1917 from 66 county societies, representing 68 counties, Sullivan, Johnson and Carter counties being allied in the organization of one society. There are, therefore, 28 counties in the State in which no medical organization existed in 1917. These are Benton, in West Tennessee; Cannon, Cheat-ham, Clay, DeKalb, Fentress, Houston, Humphreys, Lawrence, Lewis, Moore, Perry, Pickett, Stewart, Trousdale, Van Buren, and Wayne. in Middle Tennessee; Bledsoe, Claiborne, Grainger, Hancock, James, McMinn, Marion, Meigs, Morgan, Sequatchie and Union in East Tennessee.

Of these unorganized counties there are a number, especially among those in Middle Tennessee, in which the medical population is too small to maintain societies. In some others, the lack of transportation facilities and other difficulties arising from the nature of the country make it practically impossible to effect and maintain organization. There are left, then, about ten or twelve counties now without medical societies in which it should be possible to perfect organization.

In the 28 unorganized counties there are 287 physicians, including white, black, old, young, good, bad and indifferent. According to the best information we have been able to secure, at least one-fifth are eligible to membership in this Association.

As in former years, it is not possible for the Secretary to make accurate report of the number of deaths or removals of members. The deaths of eleven members are known by the Secretary to have occurred since the last annual meeting, the knowledge of these, in most instances, having been gained from newspaper reports. The Committee on Memoirs will submit a suitable report and memorials.

The Secretary has been called upon to endorse an unprecedentedly large number of reciprocity papers during the year for members who, ostensibly, purposed moving to other states.

Pursuant to instructions from the House of Delegates at the last annual meeting, a committee, composed of the Secretary as Chairman,

with Drs. D. J. Roberts and J. F. Gallaher, has revised the Constitution and By-laws, and 1,000 copies of this instrument have been printed. Only one addition has been made since the last revision, that being Section 5 of Chapter 1 of the By-laws, providing for the creation of the Section on Eye, Ear, Throat and Nose.

The call of our nation for men to care for the medical needs of our Army and Navy has been answered by the members of this Association in a way that has shown the medical profession of Tennessee to be true to the traditions of our state and of our profession. While it is not possible, because of the constantly shifting figures of enlistment, to state the exact number of our members now in service, it is possible to state that from the standpoints of quantity of men and quality of men the response of this Association has been most gratifying.

In addition to those who have answered the call and have been taken into the Army and Navy medical services, a large number of the men of this Association have, with equal patriotism, offered themselves only to be rejected because of conditions beyond their control. On Exemption Boards and Medical Advisory Boards a great many of our members have given most unselfish service of major importance, while yet others have done what they could on committees and commissions whose work has not been apparent to the public.

The Journal of the Association has been put at the disposal of the Surgeons General of the Army and the Navy for such service as may be given through its columns, and the Secretary has endeavored to respond to all demands made upon him in connection with the needs of the Government in the way he has thought this Association would have him respond.

In nearly all county societies action has been taken which has provided for the maintenance of the membership in these societies and in the Association of all who have gone into the medical arm of the Army or Navy.

One member of the Association, Lieutenant David King Summers, M. O. R. C., from the Chattanooga and Hamilton County Medical Society, yielded up his life in the service of our country, having been slain in action "somewhere in France." One of the first of Tennessee physicians to offer himself when war was declared, Lieutenant Summers was the first of

the medical officers enlisted from Tennessee to fall before the fire of the enemy. He lies in an honored grave in far away France but his name will live in the hearts of the men of this Association and in the hearts of the people of his state; and in the day when the final triumph shall have come to the arms of America and her allies his sacrifice will not have been in vain and to him will be ascribed a full measure of credit and full meed of praise for his part in the glorious accomplishment of freedom for the world.

The Journal has come through the year without enlargement or improvement. In fact, it has been a task most difficult to maintain the standard heretofore accomplished, if indeed this has been maintained. There are several reasons for this lack of progress, in stating which the Secretary-Editor has no intention of shirking any responsibility nor of dodging any blame that may be justly placed upon him. In the first place, a number of the papers read at the last annual meeting of the Association, which, when read, became the property of the Association for publication in the Journal, have never been given into the hands of the Secretary. This delinquency has made it extremely difficult to supply the needed material for the body of the Journal. In the second place, the fact that many of those from whom contributions have been secured in former years have gone into war service, in the Medical Reserve Corps or elsewhere, has operated to reduce the supply of matter for the Journal. Then, too, the minds of men everywhere are occupied with the affairs of the times which are not inducive to the writing of scientific papers. And finally, the Secretary-Editor has had so many demands, growing out of present conditions, made upon his time and strength that he has been unable to accomplish as much as otherwise he might have done for the Journal.

The income of the Association, derived from membership dues and from advertising receipts and subscriptions for the Journal, as will be seen from the report of the Treasurer, has been very satisfactory when all things affecting it are taken into consideration. The expenditures have been relatively heavy, but these also must be considered in the light of present conditions. The advertising income of the Journal during certain months of the year was larger

than ever before, but of late there has been a falling off from advertising which gives us much concern. Again would we urge upon our members the importance of buying from the Journal's advertisers. It is a reasonable request to make, that they should buy what they must have from the manufacturers and dealers who use our columns and pay for the use of them, all of whom are dependable concerns and leaders in their respective commercial fields. There has not been one questionable advertisement in the Journal and there will not be, if watchful care on the part of those responsible for it can prevent.

In the interest of economy, the office of the Association has been moved to 601 Cedar street, Nashville, where all members will find a most hearty welcome and where the records of the Association, of every character, can be examined by any whose interest and right may entitle them to such privilege.

County secretaries and local officers generally were more prompt and accurate in their reports during the last year than at any former time. It is, apparently, an impossible thing, however, to secure any information of any character or to obtain any sort of reply from any sort of communication to any but very few of our individual members. To all officers, of county organizations and of the Association, from whom so much cordial and helpful assistance has been received, the Secretary would make most grateful acknowledgement, as also he would make to individual members from whom kindnesses and courteous co-operation have come to him.

It is with sincere pleasure that the faithful and efficient service of Miss Mabel Miller, assistant to the Secretary, is here recognized and commended. The detail work of this office is at certain times extremely heavy, and its proper performance calls for the exercise of intelligent care and much patience. Miss Miller has been zealous, painstaking and loyal, and to her is due a large measure of credit for whatever is praiseworthy that has been accomplished in the Secretary's office.

All moneys belonging to the Association pass through the hands of the Secretary to the Treasurer, except certain medical defense fees sent direct by county secretaries to the Chairman of the Medical Defense Committee. A statement is hereto appended showing the amounts and the

nature of every item of the funds so handled.

In conclusion, and as your servant, your Secretary would beg to be allowed to impress upon the members of this House of Delegates and upon the members of this Association generally, the vital importance of the maintenance and extension of medical organization in Tennessee. As one in position to observe the positive benefits to members themselves that accrue from active participation in the affairs of a live medical society and the benefits received by the communities served by them; as one who has seen the medical needs of our Army, and of our Government generally, better met in places where good medical societies are maintained; as one who believes that only through organization can the medical profession maintain high standards, uphold the ideals of our fathers and fully discharge its responsibilities to society; as one who thinks to have seen the interests of our soldiers and those of our professional brethren who have gone out to minister to them in the great struggle for human liberty better conserved in places where medical organization has been most nearly perfected; and as one who believes that the great mass of medical men want to render the best service possible for them to give, both now in this time of world-wide stress and in the time to come when the fight for freedom from oppression and freedom from all danger of oppression shall have been won, he would humbly but earnestly entreat that every man within the membership of this body shall determine to do his part for the strengthening and for the extension of the influence of our society, which for eighty-five years has played honorably and effectively a part for the accomplishment of the worthy purposes of scientific medicine and for the betterment of the life of our people.

Very respectfully submitted,
 OLIN WEST, Secretary.

Membership Cash 1917-18.

April

6	Dr. T. A. Patrick, Lincoln County-----	\$ 8.00
6	Dr. E. C. Freeman, Giles County-----	18.00
6	Dr. E. H. Jones, Rutherford County---	54.00
6	Dr. C. O. Bailey, Crockett County-----	14.00
6	Dr. R. H. Miller, Shelby County-----	2.00
6	Dr. R. H. Miller, Shelby County-----	2.00
6	Dr. W. W. Hill, Roane County-----	3.00
	(\$1.00 Medical Defense)	

6	Dr. J. H. Williams, Carroll County-----	4.00
6	Dr. W. R. Irish, Campbell County-----	10.00
6	Dr. Robt. M. Young, Knox County-----	14.00
7	Dr. C. O. Bailey, Crockett County-----	2.00
7	Dr. W. K. Vance, Sullivan County-----	8.00
9	Dr. W. H. Stallings, Crockett County---	2.00
9	Dr. J. L. Wright, Obion County-----	3.00
	(\$1.00 Medical Defense)	
9	Dr. C. T. Love, Crockett County-----	1.00
	(\$1.00 Medical Defense)	
9	Dr. L. D. McAuley, Fayette County-----	2.00
9	Dr. W. A. Carter, Greene County-----	2.00
9	Dr. A. B. Qualls, Overton County-----	3.00
	(\$1.00 Medical Defense)	
9	Dr. K. S. Howlett, Williamson County---	2.00
12	Dr. J. D. Carlton, Obion County-----	8.00
13	Dr. Jno. P. Grisard, Franklin County---	2.00
14	Dr. W. T. Bell, McNairy County-----	3.00
	(\$1.00 Medical Defense)	
16	Dr. H. P. Larrimore, Hamilton County---	2.00
19	Dr. E. LeRoy Wilkins, Dyer County-----	5.00
	(\$1.00 Medical Defense)	
21	Dr. S. T. Hardison, Marshall County---	2.00
21	Dr. W. T. Bell, McNairy County-----	4.00
2	Dr. C. L. Hays, Tipton County-----	3.00
	(\$1.00 Medical Defense)	
23	Dr. R. H. Miller, Shelby County-----	6.00
23	Dr. J. R. Richardson, Blount County---	1.00
	(Medical Defense)	
25	Dr. J. S. Lyons, Hawkins County-----	4.00
25	Dr. W. P. Allen, Rhea County-----	3.00
	(\$1.00 Medical Defense)	
26	Dr. J. H. Williams, Carroll County-----	2.00
27	Dr. W. W. Hill, Roane County-----	1.00
	(Medical Defense)	
		\$200.00

May

3	Dr. H. P. Larimre, Hamilton County---\$	7.00
	(\$1.00 Medical Defense)	
3	Dr. E. W. Cocke, Hardeman County-----	6.00
3	Dr. C. O. Bailey, Crockett County-----	2.00
3	Dr. Jno. O. Woods, Cocke County-----	2.00
4	Dr. W. K. Vance, Sullivan County-----	12.00
5	Dr. J. H. Williams, Carroll County-----	2.00
8	Dr. J. H. McSwain, Henry County-----	6.00
10	Dr. B. M. Tittsworth, Jefferson County--	6.00
	(\$2.00 Medical Defense)	
10	Dr. E. C. Freeman, Giles County-----	4.00
10	Dr. J. J. Abernathy, McNairy County---	2.00
	(For himself)	
11	Dr. W. G. Saunders, Madison County-----	2.00
12	Dr. R. H. Miller, Shelby County-----	12.00
14	Dr. W. R. Irish, Campbell County-----	2.00
17	Dr. S. T. Parker, Henderson, County-----	2.00
19	Dr. E. M. Fuqua, Davidson County-----	8.00
19	Dr. J. H. Williams, Carroll County-----	2.00
19	Dr. B. T. Bennett, Gibson County-----	3.00
	(\$1.00 Medical Defense)	
24	Dr. H. P. Larimore, Hamilton County---	6.00

25	Dr. J. W. Sanford, Lauderdale County---	3.00	7	Dr. M. A. Blanton, Greene County-----	2.00
	(\$1.00 Medical Defense)		10	Dr. E. M. Fuqua, Davidson County-----	8.00
31	Dr. R. H. Miller, Shelby County-----	6.00	14	Dr. S. T. Parker, Henderson County-----	2.00
			16	Dr. H. P. Larimore, Hamilton County----	4.00
		\$ 95.00	24	Dr. Chas. Griffith, Coffee County-----	2.00
June			25	Dr. A. F. Richards, White County-----	3.00
1	Dr. W. T. Bell, McNairy County-----	\$ 1.00		(\$1.00 Medical Defense)	
	(Medical Defense)		25	Dr. J. D. Carlton, Obion County-----	4.00
2	Dr. R. H. Miller, Shelby County-----	12.00			\$ 49.00
2	Dr. W. W. Hill, Roane County-----	6.00			
	(\$2.00 Medical Defense)		September		
4	Dr. J. L. Edwards, Haywood County-----	2.00	1	Dr. M. A. Beasley, Maury County-----	\$ 6.00
7	Dr. E. C. Freeman, Giles County-----	4.00	8	Dr. W. K. Vance, Sullivan County-----	2.00
8	Dr. W. C. Brown, Chester County-----	2.00	10	Dr. H. P. Larimore, Hamilton County--	4.00
13	Dr. Robt. M. Young, Knox County-----	10.00	25	Dr. C. L. Hays, Tipton County.-----	2.00
13	Dr. J. R. Richardson, Blount County-----	2.00			\$ 14.00
14	Dr. W. K. Vance, Sullivan County-----	8.00	October		
15	Dr. E. W. Coker, Hardeman County-----	2.00	1	Dr. Robt. M. Young, Knox County-----	\$ 4.00
18	Dr. H. P. Larimore, Hamilton County----	8.00	4	Dr. E. M. Fuqua, Davidson County-----	4.00
20	Dr. G. C. Thomas, Weakley County-----	1.00	5	Dr. W. K. Vance, Sullivan County-----	2.00
20	Dr. G. C. Thomas, Weakley County-----	3.00	8	Dr. W. K. Vance, Sullivan County-----	2.00
20	Dr. G. C. Thomas, Weakley County-----	4.00	11	Dr. J. D. Carlton, Obion County-----	4.00
26	Dr. H. P. Larimore, Hamilton County----	8.00	18	Dr. Hartwell Weaver, Dickson County--	2.00
21	Dr. R. A. Whitaker, Decatur County-----	4.00	18	Dr. H. C. Moorman, Fayette County----	2.00
21	Dr. E. M. Fuqua, Davidson County-----	12.00	23	Dr. Robt. M. Young, Knox County-----	6.00
26	Dr. H. P. Larimore, Hamilton County----	6.00			\$ 26.00
28	Dr. Robt. M. Young, Knox County-----	8.00	November		
29	Dr. W. P. Allen, Rhea County-----	2.00	1	Dr. E. H. Jones, Rutherford County---	\$ 8.00
		\$105.00	20	Dr. H. P. Larimore, Hamilton County---	16.00
July			20	Dr. W. R. Irish, Campbell County-----	4.00
3	Dr. J. L. Edwards, Haywood County---	\$ 2.00			\$ 28.00
5	Dr. E. M. Fuqua, Davidson County-----	2.00	December		
7	Dr. J. W. Sanford, Lauderdale County---	3.00	3	Dr. H. C. Moorman, Fayette County---	\$ 2.00
	(\$1.00 Medical Defense)		4	Dr. G. W. Moody, Bedford County-----	2.00
7	Dr. W. K. Vance, Sullivan County-----	6.00	8	Dr. H. P. Larimore, Hamilton County--	10.00
9	Dr. H. P. Larimore, Hamilton County----	2.00	10	Dr. H. P. Larimore, Hamilton County--	4.00
9	Dr. H. P. Larimore, Hamilton County----	12.00	27	Dr. H. P. Larimore, Hamilton County--	10.00
9	Dr. H. D. Miller, Washington County---	3.00	31	Dr. H. P. Larimore, Hamilton County--	6.00
	(\$1.00 Medical Defense)		Jan. 2	Dr. R. H. Miller, Shelby County----	6.00
11	Dr. B. M. Tittsworth, Jefferson County--	7.00		A. J. Guinn, Polk County (Nov. 9)-----	\$ 18.00
	(\$1.00 Medical Defense)			Walter Dotson, Wilson County (Dec. 6)--	28.00
14	Dr. K. S. Howlett, Williamson County--	2.00		R. A. Whitaker, Decatur County (Dec. 7)--	16.00
14	Dr. W. K. Vance, Sullivan County-----	2.00		Douglas Hayes, Grundy County (Dec. 7)--	9.00
19	Dr. W. G. Saunders, Madison County----	4.00		Douglas Hayes, Grundy County (Dec. 10)---	5.00
20	Dr. W. W. Hill, Roane County-----	4.00		E. LeRoy Wilkins, Dyer County (Dec. 12)--	50.00
20	Dr. J. D. Carlton, Obion County-----	2.00		O. H. Williams, Hardin County (Dec. 17)--	12.00
23	Dr. W. W. Hill, Roane County-----	2.00		A. F. Richards, White County (Dec. 26)--	36.00
23	Dr. R. H. Miller, Shelby County-----	2.00		H. P. Larimore, Hamilton County (Dec. 31)	2.00
25	Dr. J. H. McSwain, Henry County-----	1.00		H. P. Larimore, Hamilton County (Dec. 31)	14.00
	(Medical Defense)			M. A. Beasley, Maury County (Dec. 31)--	43.00
25	Dr. F. A. Zoller, Blount County-----	5.00			\$ 273.00
	(\$1.00 Medical Defense)		January		
27	Dr. J. H. Williams, Carroll County-----	4.00	1	B. J. High, Smith County-----	30.00
		\$ 65.00	1	J. D. Carlton, Obion County-----	29.00
August				(\$5.00 Medical Defense)	
1	Dr. C. P. Martin, Putnam County-----	\$ 6.00			
3	Dr. R. H. Miller, Shelby County-----	8.00			
4	Dr. R. M. Young, Knox County-----	4.00			
7	Dr. H. Weaver, Dickson County-----	6.00			

1	J. D. Alexander, Lake County-----	20.00	29	J. H. McSwain, Henry County-----	26.00
	(\$4.00 Medical Defense)			(\$4.00 Medical Defense)	
2	T. M. Roberts, Monroe County-----	30.00			
	(\$10.00 Medical Defense)				
4	H. P. Larimore, Hamilton County-----	22.00	Feb.		
	(\$10.00 1917 dues)				
4	H. P. Larimore, Hamilton County-----	6.00	1	Dr. H. P. Larimore, Hamilton County---	\$ 1.00
	(Medical Defense)			(Medical Defense)	
4	D. R. Pickens, Davidson County-----	4.00	1	Dr. H. P. Larimore, Hamilton County--	10.00
	(1917 dues)		2	Dr. Milton Tharp, Davidson County---	36.00
5	Hartwell Weaver, Dickson County-----	38.00	4	Dr. H. A. Nesbit, Montgomery County--	3.00
	(\$6.00 Medical Defense)			(\$1.00 Medical Defense)	
7	T. A. Patrick, Lincoln County-----	38.00	7	Dr. J. D. Carleton, Obion County-----	4.00
7	T. A. Patrick, Lincoln County-----	4.00	7	Dr. M. A. Beasley, Maury County-----	12.00
8	Walter Dotson, Wilson County-----	2.00	7	Dr. J. H. Jones, Crockett County-----	6.00
8	H. P. Larimore, Hamilton County-----	16.00	7	Dr. Otis S. Warr, Shelby County-----	118.00
	(\$8.00 1917 dues)		7	Dr. Otis Warr, Shelby County-----	8.00
8	H. P. Larimore, Hamilton County-----	1.00	9	Dr. W. K. Vance, Sullivan County-----	34.00
	(\$1.00 Medical Defense)		9	Dr. T. J. Hickman, Loudon County-----	8.00
10	B. T. Bennett, Gibson County-----	67.00	9	Dr. R. L. Motley, Dyer County-----	6.00
10	H. P. Larimore, Hamilton County-----	18.00		(\$2.00 Medical Defense)	
10	H. P. Larimore, Hamilton County-----	2.00	11	Dr. Milton Tharp, Davidson County-----	10.00
	(Medical Defense)		11	Dr. B. T. Bennett, Gibson County-----	2.50
12	Milton Tharp, Davidson County-----	98.00		(\$1.00 Medical Defense)	
12	Jno. P. Grisard, Franklin County-----	8.00	11	Dr. H. P. Larimore, Hamilton County---	6.00
12	Jno. O. Wood, Cocke County-----	20.00	12	Dr. Jno. M. Stewart, Weakley County---	3.00
14	J. M. Cox, Anderson County-----	24.00		(\$1.00 Medical Defense)	
	(\$8.00 Medical Defense)		12	Dr. G. W. Moody, Bedford County-----	28.00
15	Hartwell Weaver, Dickson County-----	4.00	13	Dr. W. M. Brown, Overton County-----	3.00
15	S. T. Hardison, Marshall County-----	56.00		(\$1.00 Medical Defense)	
	(\$12.00 Medical Defense)		13	Dr. F. A. Zoller, Blount County-----	14.00
16	H. P. Larimore, Hamilton County-----	10.00		(\$2.00 Medical Defense)	
16	H. P. Larimore, Hamilton County-----	2.00	13	Dr. B. T. Bennett, Gibson County-----	.50
	(Medical Defense)		13	Dr. W. C. Brown, Chester County-----	14.00
17	O. H. Williams, Hardin County-----	4.00	15	Dr. W. T. Bell, McNairy County-----	3.00
17	O. H. Williams, Hardin County-----	2.00		(\$1.00 Medical Defense)	
17	O. H. Williams, Hardin County-----	2.00	18	Dr. W. N. Lynn, Knox County-----	22.00
18	W. N. Lynn, Knox County-----	64.00	18	Dr. J. H. Jones, Crockett County-----	2.00
19	Milton Tharp, Davidson County-----	12.00	19	Dr. Milton Tharp, Davidson County-----	12.00
19	Jno. M. Stewart, Weakley County-----	33.00	19	Dr. B. T. Bennett, Gibson County-----	3.00
	(\$7.00 Medical Defense)			(\$1.00 Medical Defense)	
21	H. P. Larimore, Hamilton County-----	10.00	20	Dr. T. F. Painter, Hamblen County-----	44.00
	(\$2.00 1917 dues)			(\$14.00 Medical Defense)	
23	Milton Tharp, Davidson County-----	14.00	20	Dr. K. S. Howlett, Williamson County--	11.00
24	R. L. Motley, Dyer County-----	3.00		(\$3.00 Medical Defense)	
	(\$1.00 Medical Defense)		20	Dr. W. W. Hill, Roane County-----	10.00
24	H. P. Larimore, Hamilton County-----	10.00		(\$2.00 Medical Defense)	
26	A. B. Qualls, Overton County-----	15.00	21	Dr. Jno. R. Parker, Sumner County-----	40.00
	(\$5.00 Medical Defense)			(\$9.00 Medical Defense)	
26	B. T. Bennett, Gibson County-----	3.00	21	Dr. E. H. Jones, Rutherford County----	15.00
	(\$1.00 Medical Defense)			(\$1.00 Medical Defense)	
26	W. W. Hill, Roane County-----	32.00	22	Dr. E. H. Jones, Rutherford County-----	2.00
	(\$6.00 Medical Defense)		23	Dr. J. H. McSwain, Henry County-----	4.00
28	H. P. Larimore, Hamilton County-----	10.00	23	Dr. Jno. M. Stewart, Weakley County--	6.00
28	H. P. Larimore, Hamilton County-----	2.00	23	Dr. Otis S. Warr, Shelby County-----	4.00
	(Medical Defense)		23	Dr. C. E. Reeves, Jackson County-----	3.00
28	Dr. J. F. Gallagher, Chairman-----	99.00		(\$1.00 Medical Defense)	
	(\$33.00 Medical Defense)		23	Dr. H. D. Miller, Washington County----	50.00
29	T. J. Hickman, Loudon County-----	5.00	23	Dr. H. D. Miller, Washington County----	11.00
	(\$1.00 Medical Defense)			(Medical Defense)	
			25	Dr. H. P. Larimore, Hamilton County---	6.00

 \$895.00

25	Dr. H. P. Larimore, Hamilton County--	2.00	18	Dr. Lex Dyer, Putnam County-----	36.00
	(Medical Defense)			(\$10.00 Medical Defense)	
25	Dr. T. J. Hickman, Loudon County-----	2.00	18	Dr. E. W. Cocke, Hardeman County---	20.00
27	Dr. R. L. Motley, Dyer County-----	6.00	19	Dr. W. T. Bell, McNairy County-----	3.00
	(\$2.00 Medical Defense)			(\$1.00 Medical Defense)	
26	Dr. G. W. Moody, Bedford County-----	2.00	19	Dr. A. Y. Kirby, Macon County-----	18.00
26	Dr. T. M. Roberts, Monroe County-----	3.00		(\$6.00 Medical Defense)	
27	Dr. B. M. Tittsworth, Jefferson County--	30.00	19	Dr. L. Hill, Jr., Tipton County-----	9.00
	(\$10.00 Medical Defense)			(\$3.00 Medical Defense)	
28	Dr. Herman Hawkins, Madison County--	42.00	19	Dr. R. P. Beasley, Hickman-----	8.00
			20	Dr. Jno. E. Powers, Coffee County-----	18.00
				(\$6.00 Medical Defense)	
		-----	21	Dr. R. A. Whitaker, Decatur County---	2.00
		\$662.00	21	Dr. H. P. Larimore, Hamilton County--	8.00

March.

1	Dr. F. A. Zoller, Blount County-----	\$ 2.00	21	Dr. W. W. Hill, Roane County-----	4.00
2	Dr. J. D. Carlton, Obion County-----	2.00	21	Dr. Joe B. Lackey, Lauderdale County--	64.00
2	Dr. J. H. McSwain, Henry County-----	3.00		(\$20.00 Medical Defense)	
	(\$1.00 Medical Defense)		22	Dr. Walter Dotson, Wilson County-----	3.00
4	Dr. H. P. Larimore, Hamilton County--	6.00		(\$1.00 Medical Defense)	
6	Dr. H. D. Miller, Washington County---	3.00	23	Dr. Jno. R. Parker, Sumner County---	6.00
6	Dr. Otis S. Warr, Shelby County-----	8.00		(\$2.00 Medical Defense)	
6	Dr. Geo. A. Brandon, Henderson-----	48.00	23	Dr. L. Hill, Jr., Tipton County-----	3.00
	(\$6.00 Medical Defense)			(\$1.00 Medical Defense)	
6	Dr. W. T. Bell, McNairy County-----	10.00	23	Dr. Otis S. Warr, Shelby County-----	20.00
	(\$2.00 Medical Defense)		25	Dr. F. A. Zollner, Blount County-----	2.00
6	Dr. R. C. Gaw, Jackson County-----	18.00	25	Dr. W. T. Bell, McNairy County-----	18.00
	(\$6.00 Medical Defense)			(\$6.00 Medical Defense)	
6	Dr. Milton Tharp, Davidson County----	16.00	26	Dr. E. H. Jones, Rutherford County----	17.00
7	Dr. H. P. Larimore, Hamilton County--	6.00		(\$1.00 Medical Defense)	
7	Dr. H. P. Larimore, Hamilton County--	1.00	26	Dr. J. W. Ogle, Sevier County-----	18.00
	(\$1.00 Medical Defense)			(\$2.00 Medical Defense)	
7	Dr. B. F. Runyon, Montgomery-----	34.00	26	Dr. B. T. Bennett, Gibson County-----	3.00
	(\$8.00 Medical Defense)		26	Dr. W. T. Bell, McNairy County-----	2.00
8	Dr. M. A. Blanton, Greene County-----	53.00	27	Dr. Otis Warr, Shelby County-----	20.00
	(\$5.00 Medical Defense)		28	Dr. Geo. A. Brandon, Henderson County	2.00
8	Dr. B. M. Tittsworth, Jefferson County--	9.00	28	Dr. G. C. Grimes, Giles County-----	32.00
	(\$3.00 Medical Defense)		28	Dr. W. T. Bell, McNairy County-----	3.00
				(\$1.00 Medical Defense)	
8	Dr. W. K. Vance, Sullivan County-----	10.00	28	Dr. Jno. E. Powers, Coffee County-----	8.00
11	Dr. H. P. Larimore, Hamilton County--	10.00	28	Dr. Jno. O. Woods, Cocke County-----	2.00
11	Dr. H. P. Larimore, Hamilton County--	1.00	30	Dr. J. H. Williams, Carroll County----	30.00
	(\$1.00 Medical Defense)		30	Dr. J. D. Carlton, Obion County-----	4.00
11	Dr. Geo. A. Brandon, Henderson-----	3.00	8	Dr. Walter Dotson, Wilson County----	2.00
	(\$1.00 Medical Defense)		11	Dr. H. H. Hawkins, Madison County---	18.00
11	Dr. W. C. Brown, Chester County-----	4.00			
11	Dr. M. A. Beasley, Maury County-----	9.00			-----
	(\$1.00 Medical Defense)				\$760.00
11	Dr. Otis Warr, Shelby County-----	4.00			
15	Dr. F. A. Zoller, Blount County-----	2.00			
15	Dr. H. P. Larimore, Hamilton County--	6.00			
15	Dr. R. C. Miller, Rhea County-----	13.00			
	(\$3.00 Medical Defense)				
16	Dr. W. C. Brown, Chester County-----	2.00			
18	Dr. O. S. Warr, Shelby County-----	8.00			
18	Dr. J. D. Carlton, Obion County-----	9.00			
	(\$3.00 Medical Defense)				
18	Dr. L. Hill, Jr., Tipton County-----	21.00			
	(\$7.00 Medical Defense)				
18	Dr. W. N. Lynn, Knox County-----	28.00			
18	Dr. K. S. Howlett, Williamson-----	8.00			
	(\$2.00 Medical Defense)				

Advertising Cash—1917-1918.

April

6	N. A. Guyer (Exhibit Space)-----	\$ 10.00
6	City View Sanitarium-----	7.50
6	Hotel Tulane (Advertising Space)-----	8.00
6	D. Loveman, Berger & Teitlebaum----	4.00
10	Ambrose Printing Company-----	3.33
11	Nashville Surgical Supply Company----	5.42
11	Dr. Allen H. Bunce-----	5.00
11	Southern Ice Company-----	10.00
11	W. B. Saunders (Exhibit Space)-----	10.00
11	Nashville Pure Milk Company-----	2.92
12	McQuiddy Printing Company-----	5.42
13	Lynnhurst Sanitarium-----	15.00
14	Cooperative Medical Advertising Bureau--	90.94

16	Oxford Retreat	2.50
18	F. A. Hardy & Company	5.00
19	Parke, Davis & Company	7.13
21	Armour & Company	7.00
24	Dr. Ed. Culp (Subscription)	2.00
25	Cincinnati Sanitarium	5.00
26	K. K. Mulford Company	9.50
26	Theo. Tafel Company	10.00

\$225.66

May

3	City View Sanitarium	\$ 7.50
3	Louisville Neuropathic Sanitarium	4.00
4	Dr. Katherine L. Storm	2.50
5	Parke, Davis & Company	7.13
10	H. K. Mulford Company	9.50
10	Southern Ice Company	10.00
16	Ambrose Printing Company	3.33
10	McQuiddy Printing Company	5.42
10	Armour & Company	7.00
11	Nashville Surgical Supply Company	20.42
	(Exhibit Space included)	
14	Cooperative Medical Advertising Bureau	93.30
14	Nashville Pure Milk Company	2.92
14	Drs. Petty & Wallace	7.50
16	Dr. Allen H. Bunce	5.00
16	F. A. Hardy & Company	5.00
18	Oxford Retreat	2.50
18	Fairchild Bros. & Foster	7.50
28	Cincinnati Sanitarium	5.00
28	Dr. M. Smith, Robey, Texas, Journal	.25

\$205.77

June

1	City View Sanitarium	\$ 7.50
4	Fairchild Bros. & Foster	7.50
5	Louisville Neuropathic Sanitarium	4.00
8	Dr. Katherine L. Storm	2.50
9	Southern Ice Company	10.00
11	Parke, Davis & Company	7.13
12	McQuiddy Printing Company	5.42
12	Nashville Surgical Supply Company	5.42
12	Dr. J. B. Grothaus (Adv.)	1.00
13	Nashville Pure Milk Company	2.92
13	Ambrose Printing Company	3.33
14	Cooperative Medical Advertising Bureau	89.00
14	Armour & Company	7.00
15	Jensen, Herzer & Jeck	4.00
16	H. K. Mulford Company	9.50
18	Dr. Allen H. Bunce	5.00
20	P. G. Tucker (Exhibit Space)	15.00
22	Oxford Retreat	2.50
25	Fairchild Bros. & Foster	7.50
26	The Cincinnati Sanitarium	5.00

\$201.22

July

2	City View Sanitarium	\$ 7.50
2	Robert Lyle	4.00
6	Theo. Tafel Company	15.00

7	Louisville Neuropathic Sanitarium	4.00
11	Nashville Surgical Supply Company	5.42
11	Nashville Pure Milk Company	2.92
12	Southern Ice Company	10.00
12	Dr. W. M. Brown, advertising	1.00
12	Ambrose Printing Company	3.33
14	Dr. Hazel Barnes (Subscription)	2.00
14	Armour & Company	7.00
16	Katherine L. Storm	2.50
16	Fairchild Bros. & Foster	7.50
16	Cooperative Medical Advertising Bureau	89.94
16	Dr. W. P. Robinson (Subscription)	2.00
16	Parke, Davis & Company	7.13
18	Oxford Retreat	2.50
21	Allen H. Bunce	5.00
24	Lynnhurst Sanitarium	15.00
30	H. K. Mulford Company	9.50
30	Cincinnati Sanitarium	5.00

\$208.24

August

1	City View Sanitarium	\$ 7.50
2	New Orleans Polyclinic	15.00
4	Petty & Wallace Sanitarium	7.50
4	Louisville Neuropathic Sanitarium	4.00
11	Ambrose Printing Company	3.33
11	Nashville Surgical Supply Company	5.42
12	Cooperative Medical Advertising Bureau	79.18
12	Nashville Pure Milk Company	2.92
15	Allen H. Bunce	5.00
16	Parke, Davis & Company	7.13
17	Southern Ice Company	10.00
17	Armour & Company	7.00
18	Oxford Retreat	2.50
23	Fairchild Bros. & Foster	7.50
25	Cincinnati Sanitarium	5.00

\$168.98

September

1	Frank K. Wanner (1 Yr's Subscription)	\$ 2.00
4	City View Sanitarium	7.50
11	Southern Ice Company	10.00
11	Nashville Surgical Supply Company	5.42
11	Nashville Pure Milk Company	2.92
11	Dr. N. C. Ellis (3 Mos. Advertising)	5.00
12	Parke, Davis & Company	7.13
13	Dr. Allen H. Bunce	5.00
1	Cooperative Medical Advertising Bureau	67.46
14	Dr. Herman Spitz (Advertising)	10.00
15	Armour & Company	7.00
17	Katherine L. Storm	7.50
19	Louisville Neuropathic Sanitarium	4.00
20	Ambrose Printing Company	3.33
20	Theo. Tafel Company	10.00
20	Fairchild Bros. & Foster	7.50
24	Oxford Retreat	2.50
24	Wautaga Sanitarium	61.32
24	H. K. Mulford Company	19.00
26	Cincinnati Sanitarium	5.00
29	Dr. J. McNamara (6 Mos. Sub. to Jour.)	1.00

\$250.58

October

1	Model Laundry	\$ 33.30
1	Geo. S. Johnston Company	54.15
6	Louisville Neuropathic Sanitarium	4.00
10	Nashville Pure Milk Company	2.92
11	Nashville Surgical Supply Company	5.42
11	Dr. Allen H. Bunce	5.00
12	Parke, Davis & Company	7.13
12	Armour & Company	7.00
12	Ambrose Printing Company	3.33
13	Southern Ice Company	10.00
15	Lynnhurst Sanitarium	15.00
15	Cooperative Medical Advertising Bureau	82.02
18	H. K. Mulford Company	9.50
22	Oxford Retreat	2.50
24	Cincinnati Sanitarium	5.00
25	Fairchild Bros. & Foster	7.50

November

		\$253.77
1	City View Sanitarium	\$ 15.00
5	Theo. Tafel Company	10.00
6	Louisville Neuropathic Sanitarium	4.00
10	Ambrose Printing Company	3.33
13	Nashville Surgical Supply Company	5.42
16	Cooperative Medical Advertising Bureau	86.14
16	Armour & Company	7.00
17	Oxford Retreat	2.50
26	Southern Ice Company	10.00
26	Highland Sanitarium	20.00
26	Cincinnati Sanitarium	5.00
26	Jungerman & Rust (Nashville Credit Men's Association)	4.73
28	Petty & Wallace Sanitarium	7.50
30	Otto P. Myer's Squibb & Sons	5.00

December

		\$185.62
5	Fairchild Bros. & Foster	\$ 7.50
8	City View Sanitarium	7.50
11	Nashville Surgical Supply Company	5.42
11	Southern Ice Company	10.00
11	Louisville Neuropathic Sanitarium	4.00
13	Dr. Allen H. Bunce	10.00
13	Model Laundry	3.33
13	Katherine L. Storm	7.50
14	Cooperative Medical Advertising Bureau	89.94
17	Fairchild Bros. & Foster	7.50
20	Parke, Davis & Company	14.25
20	Theo. Tafel Company	5.00
20	H. K. Mulford Company	9.50
21	Oxford Retreat	2.50
24	Cooperative Medical Advertising Bureau	26.04
26	Armour & Company	7.00
26	Lemcke & Breckner (1 Yrs. Sub.)	2.00
28	Cincinnati Sanitarium	5.00
		\$223.98

January

4	City View Sanitarium	\$ 7.50
9	Louisville Neuropathic Sanitarium	4.00
12	Nashville Surgical Supply Company	5.42
12	Parke, Davis & Company	7.13
12	Ambrose Printing Company	6.66

14	Dr. Allen H. Bunce	5.00
17	Cooperative Medical Advertising Bureau	96.97
19	Southern Ice Company	10.00
19	Oxford Retreat	2.50
21	Armour & Company	7.00
21	H. K. Mulford Company	9.50
23	Dr. Herman Spitz (Advertising)	9.00
24	Year Book Publishers	2.00
25	Lynnhurst Sanitarium	15.00
28	Cincinnati Sanitarium	5.00
28	Fairchild Bros. & Foster	7.50
28	Dr. Geo. Trawick (1 Yr's Subscription)	2.00
28	From Nashville Credit Men's Association (Jungerman)	6.30
		\$208.48

Feb.

1	City View Sanitarium	\$ 7.50
4	Drs. Newell & Newell	2.92
4	Petty & Wallace Sanitarium	7.50
5	Louisville Neuropathic Sanitarium	4.00
9	Parke, Davis & Company	7.13
11	Dr. B. S. Galbraith. Advertising	5.00
12	Nashville Surgical Supply Company	5.42
12	Ambrose Printing Company	3.33
13	Theo. Tafel Company	10.00
14	Dr. Allen H. Bunce	5.00
14	Cooperative Medical Advertising Bureau	78.87
18	Armour & Company	7.00
21	H. K. Mulford Company	9.50
21	Fairchild Bros. & Foster	7.50
22	Oxford Retreat	2.50
25	Cincinnati Sanitarium	5.00
28	Dr. W. A. BBryan (In payment for cuts)	11.52
		\$179.69

March.

4	City View Sanitarium	\$ 7.50
6	Southern Ice Company	10.00
6	Katherine L. Storm	7.13
7	Louisville Neuropathic Sanitarium	4.00
7	Parke, Davis & Company	7.13
11	Ambrose Printing Company	3.33
12	Nashville Surgical Supply Company	5.42
15	Dr. Allen H. Bunce	5.00
15	Co-operative Med. Adv. Bureau	88.09
15	Armour & Company	7.00
18	H. K. Mulford	9.50
18	Fairchild Bros. & Foster	7.50
22	Watauga Sanitarium	17.52
22	Rich Printing Company (deduction from March statement)	54.20
23	Oxford Retreat	2.50
27	Cincinnati Sanitarium	5.00
		\$240.82

THE GOOD SAMARITAN FUNCTION OF THE MEDICAL CORPS.

Major George de Tarnowsky, N.O.R.C., (Review of Surgery and Medicine, March, 1918, Vol. 1, No. 1, prepared in the office of the Surgeon General) gives one of the best descriptions of the surgery in the zone of advance, from personal observations on the French front. Attention of all medical officers is directed to the following:

"In addition to hot meals which are carried to the soldiers in the trenches, the Medical Corps now sends hot tea, flavored with a small amount of brandy, to the front lines twice daily—a most welcome potion, which the soldiers look forward to with eagerness. The prevailing idea of the French Medical Corps is to make the fighting men feel and know that their comfort is being looked after and that everything is being done to mitigate the hardships under which they live. The French are strong believers in the personal element—the little acts of kindness, even of tenderness, towards the individual soldier which have helped to keep up both his fighting spirit and his mental serenity. The "*tisaneries*," as the hot tea stations are called, did not come into existence as the result of army orders; they represent a voluntary contribution to the soldier on the part of the Medical Corps. Begun in a small way, it was soon noticed that, where the *tisaneries* existed and the regimental kitchen were installed near enough to the trenches so that the food reached the soldier hot, the morale and fighting edge were of the finest."

TUBERCULOSIS.

G. E. Bushnell, Washington, D. C. (Journal A. M. A., March 9, 1918), says that tuberculosis is the most curable of chronic diseases, and one of great interest to the public. It was decided by the Surgeon-General, early in the war, that the entire army should be examined for tuberculosis by expert physicians. The examination is now nearing completion, and when finished approximately 800,000 men will have been examined. The number of cases of tuberculosis detected is somewhat less than 1 per cent. While a categorical answer, as to the efficiency of the examination, can be given, every effort has been made to obtain the most skilful examiners. That every case has been detected, no one could claim.

Some soldiers were necessarily missed when they were on detached service, on furlough, etc. when the examinations were made. A fair question, and one of some importance, is, Have not the examinations been too thorough in some cases? It has been the aim of many writers on the diagnosis of tuberculosis to discover signs of the disease, that will reveal its presence much earlier than is possible by resort to the commonly recognized signs. Striving after new signs or giving a new significance to signs formerly regarded as unimportant or overlooked entirely, has been noticeable, not only in this country but in others. Many of the younger men have grown up in the belief that the diagnosis of tuberculosis is very difficult and have been discouraged in attempting such diagnosis themselves, unless the circumstances were such that they could specialize in tuberculosis. If these ideas are correct, many cases will be called tuberculosis wrongfully, without a doubt, and credit given for cures that never occurred. One can hardly estimate the effect which this teaching has on the military efficiency of the army. Early in the war it was reported, on the authority of Landouzy, that during the first year of the war 86,000 soldiers were discharged from the French army on account of tuberculosis. This statement was received with something like consternation, and the deduction was made that military service especially favors the development and spread of the disease, and its slightest indication should be sought for with extreme care. Since Landouzy's pronouncement, enough time has elapsed for a revision of these figures. The discharged soldiers composing an army of 86,000 have been examined, and, from a cablegram recently received from the French Minister of War, it appears that less than 50 per cent of this 86,000 are now officially recognized as having tuberculosis. Bushnell also quotes Major Rist, of the French army, who was at one time attached to the office of the Surgeon-General of our army, as expressing the opinion that less than 20 per cent. of the 86,000 were really tuberculous, and that the figures given by the Minister of War are, to say the least, conservative. It is probable, Bushnell thinks, that the cases of tuberculosis among the French soldiers is not greater than would have occurred among

them in civil life. The Germans have, it is said, had to, with their need of soldiers, accept for enlistment persons with healed and inactive tuberculosis, many of whom made excellent soldiers. The experience of the British Army, as well as our own, has been that army life has had a good influence rather than the reverse on men with old or arrested tuberculosis. Bushnell is avowedly an optimist as regards the effect of army life on the general physique. He feels the more strongly about it, as he spent six months in harmful idleness, at one time, from a diagnosis of tuberculosis due to a misinterpretation of physical signs.

DETECTION OF PRETENDED LOSS OF HEARING.

Detection of pretended loss of hearing with special reference to unilateral deafness, which is said by French military physicians to be a common form of malingering and one most difficult to detect, is the subject of a paper by R. K. Brownfield, Phoenix, Arizona, (*Journal A. M. A.*, March 2, 1918). He describes a method of testing cases by which he claims certain advantages over the acoumeter used by the French physicians. In his device batteries and make-and-break contact are dispensed with, and the ordinary 110 volt alternating commercial lighting current is used. The variable current is produced by a potentiometer. No vibrating iron is used, and the maximum strength of current employed depends on no factor except the ratio of the electrical resistances used. The sound producer is similar to a telephone receiver, except that the core is of soft iron and is not magnetized. This eliminates the variability due to demagnetization, and doubles the pitch. The sound producer is provided with three legs to hold it away from the ear, so that the sound will be transmitted solely by air conduction. By simply turning the indicator from 100 to zero, one can cause the sound to increase from the point at which it is just perceptible to one of normal hearing, the threshold of audition, or 100 per cent acuity, to a degree of intensity at which failure to perceive it indicates that the subject has not practical hearing. In addition to the variable receiver, there is a supplementary one that always operates at maximum in-

tensity, irrespective of the loudness of the other. In the usual test for acuity of hearing, only the variable receiver is used. As the subject holds this to the ear, the pointer is gradually carried from the zero to the 100 degree point and he is directed to tell at what point the sound ceases to be heard. This is noted and the movement of the pointer continued still farther, and he is asked to note the point at which it begins again to be heard. After some repetitions, the points will be found to harmonize quite closely, except in the case of malingering. The apparatus is, of course, out of the patient's sight—behind him. In case of a person claiming deafness in only one ear, he is made to hold the constantly loud receiver over the alleged deaf ear and the variable receiver over the other. Starting at 100, the pointer is gradually moved toward zero and he is asked to say when he first hears the sound in his good ear. If he has complete deafness in one ear, the presence of the loud receiver will not disturb him, but if he is merely pretending, it would be absolutely impossible for him to identify any sound whatever in his good ear, to which the variable receiver is applied, until a point on the scale is reached that would normally indicate very defective or almost no hearing for the good ear. The test can be repeated with the loud receiver disconnected, and a totally different reading secured in the case of malingering.

ACIDOSIS IN SHOCK.

W. B. Cannon (Boston) France (*Journal A. M. A.*, February 23, 1918), has in his studies of shock found it desirable to examine the blood for certain chemical changes. Among these are changes in the alkali reserve and in the sugar content. A reduction of the former would be indicated by an abnormally small quantity of sodium bicarbonate in the blood and this is the condition defined by Henderson as acidosis. The sugar content might be significant as to the nature of the acidosis, and would also throw light on other processes in the body. The Van Slyke apparatus was used for the former determination. Any figures lower than 50 per cent of volumes of carbon dioxide would indicate acidosis in an adult. The blood sugar was estimated by the easy and reliable method devised by Mey-

ers and Bailey. The author has examined 47 cases of low blood pressure, whether due to shock alone or complicated by hemorrhage and gas bacillus infection. Observations were made on the relations of acidosis to blood pressure, pulse, and respiration; the sugar content of the blood; the effects of anesthesia and operation on existent acidosis and low blood pressure and the influence of alkaline treatment in cases of extreme acidosis. The details of the findings were given in each case and also in tabulated form. Cannon summarizes the substance substantially as follows: Cases of low blood pressure caused by shock, hemorrhage or gas gangrene, show an acidosis which as a rule is more marked, the lower the pressure. The pulse is rapid in these cases but does not vary with the degree of acidosis. The respiratory rate becomes more rapid with increased acidosis, and shortly before death, a true "air hunger" may prevail. Blood sugar is usually somewhat increased above the normal in cases of shock and hemorrhage, showing that acidosis is not due to lack of circulating carbohydrate. Operation on patients with shock and acidosis causes serious and rapid sinking of arterial pressure when it is already low, and a marked and steady decrease of the alkali reserve, when that is, also, already low. This change may not occur if nitrous oxid-oxygen anesthesia, instead of ether, is employed, but that anesthetic does not guarantee against the ominous decline. Shocked men suffering after operation from extreme acidosis with "air hunger," can be quickly relieved of their distress by intravenous injection of a solution of bicarbonate, and their blood pressure restored to normal.

THE ASSOCIATION WAR SERVICE.

Reprinted from the Journal of the American Medical Association, March 9, 1918, Vol. 70, P. 697.

"It is a matter of tremendous importance to the nation, as it is to the medical profession, that systems be devised by which individuals who compose it will be so evaluated that some one in each state, some one for the whole nation, may be able to tell Congress the exact value of the medical man power of the country at any moment.

"This should have been done long ago by the American Medical Association, through its splendid facilities for organization, but it has so utterly failed to realize its opportunities in this respect that it scarcely consulted in Washington and the duties and responsibilities it should have proudly and efficiently borne have been undertaken by the Medical Section of the Council of National Defense."

This is quoted from an editorial in a journal owned and controlled by one of the constituent state associations of the American Medical Association. The fact that this charge appeared in a state journal prompted the chairman of the Board of Trustees and the secretary of the American Medical Association, independently, to write to the Surgeon-General asking if there is any basis in fact or any justice or truth in the charge.

The following are the replies of the Surgeon-General:

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
WASHINGTON.

Thomas McDavitt, M.D., FEBRUARY 22, 1918.

Chairman, Board of Trustees,
American Medical Association,
St. Paul, Minn.

Dear Doctor McDavitt:—In answer to your letter dated Feb. 14, 1917, I am very glad to acknowledge the great service which the American Medical Association has given, with and without solicitation, to me personally and to the office of the Surgeon-General, in the solution of the important problems of preparedness for war and of the medical and surgical care of our boys in training camp and field by the Medical Department of the Army.

Through the officers, the Journal and educational propaganda distributed by the American Medical Association, we have secured thousands of officers of the Medical Reserve Corps. The office of the Surgeon-General and the Medical Department of the Army still need your aid and support.

Permit me to thank you, and through you the other trustees and officers of the Association for the valuable help already rendered and for the acceptable offer of a continued life service.

Very truly yours,

(Signed) W. C. GORGAS,
Surgeon-General U. S. Army.

WAR DEPARTMENT,
OFFICE OF THE SURGEON-GENERAL,
WASHINGTON.

FEBRUARY 22, 1918.

Dr. Alex. R. Craig, Secretary,
American Medical Association,
535 North Dearborn St.,
Chicago, Ill.

Dear Doctor Craig:—It gratifies and affords me pleasure to acknowledge the great services rendered by the American Medical Association to me personally and to the office of the Surgeon-General, in organizing the Medical Department of the Army for the efficient care of our soldiers in training camp and field.

Since April, 1917, the Board of Trustees, the officers at the Chicago headquarters, The Journal and all the machinery of the American Medical Association have been important and distinctive factors through which many thousands of physicians have been influenced to apply for positions in the Medical Reserve Corps; medical officers have received valuable instruction by means of special articles printed in The Journal and also through literature distributed in pamphlet form from the office; and in other ways too great to enumerate here.

The spirit of service expressed by the officers and members of the American Medical Association in so many helpful ways, in the work for war and for actual surgical and medical care of our soldiers in war, evidences a patriotism and devotion to country which is a credit to the American medical profession.

I accept and thank you, and through you the other officers of the Association, for the offer to continue the same services of the Association to the Medical Department of the Army as long as may be.

Very truly yours,
(Signed) W. C. GORGAS,
Surgeon-General, U. S. Army.

HERNIA.

J. C. Bloodgood, Baltimore (*Journal A. M. A.*, February 23, 1918), calls attention to a small group of hernias that can be readily recognized at the first examination, but which are more liable than others to recur or fail to be cured by operation. They can be recognized when the patient is examined lying flat on his back. If the finger is pressed against the scrotum and pushed up into the external ring, as the index finger passes through the external ring (the hernia having been reduced) it usually meets an obstruction (the conjoined tendon) and is deflected upward and outward following the course of the so-called internal ring. In this smaller group the index finger meets no obstruction, but enters at once into the peritoneal cavity. Now and then one gets the impression that it does this in other cases, but if the patient is asked to raise his head, the non-contracting rectus muscle pulls tight the relaxed conjoined tendon and the examiner readily recognizes that it is not absent but simply relaxed. In those cases in which the examination detects the complete absence of the conjoined tendon, the ordinary operation for inguinal hernia fails to cure in about 50 per cent of the cases, according to Bloodgood's observations. After his first observation of this in 1898, Bloodgood devised and published a description of the transplantation of the rectus muscle to take the place of the conjoined tendon, and this he found had been independently worked out by Woelfler in 1898. Later, Halsted modified the transplantation of the rectus muscle by turning down a pedunculated flap of the anterior sheath of the rectus. He calls attention to this class, thinking it may be of service to examining physicians of the large cantonments now in use.

TRICHINOSIS.

A report of three cases simulating meningitis with the findings of trichina larvae in the spinal fluid is given by Jacob Meyer, Chicago (*Journal A. M. A.*, March 2, 1918). The patients were all members of the same family, two girls and a boy, all in the contagious disease department of the Cook County Hospital Chicago, and in all three the meningitic symptoms were present, and in two of them trichina larvae were present in the spinal fluid. The spinal fluid

also showed an increase of lymphocytes, reduced the Hames solution and gave a positive Ross-Jones test. Meyer calls attention to the necessity of differentiating trichinosis with meningeal irritation from poliomyelitis.

ROENTGENOGRAPHY.

In a preliminary report of the study of the best methods of obtaining good roentgenographs by the use of chemical solutions D. F. Cameron, Fort Wayne, Ind. (*Journal A. M. A.*, March 16, 1918), reports experiments with different substances. Thorium nitrate is too scarce and bismuth has its inconveniences, but he finds that a fifty per cent solution of potassium iodid, made of potassium iodid, 50 g., and distilled water, 50 c.c., is almost completely opaque to the roentgen ray. If such a solution is for convenience called "full strength," the half and quarter strengths cast very definite shadows. These solutions are not troublesome to make and are inexpensive. They are stable, saline to the taste, but non-irritating except on surfaces freshly denuded of epithelium. They do not cause precipitation or coagulation when mixed with blood or urine. Good roentgenograms of the human bladder filled with a 15 per cent potassium iodid solution, and of chronic sinuses filled with a 50 per cent solution, have been made. No bad effects have been noted. A 25 to 30 per cent solution should be sufficient for good pyelograms. Caution, however, should be used in their clinical employment until further studies have been made as to their effects

NEODIARSENOL.

J. W. Miller, Cincinnati (*Journal A. M. A.*, March 2, 1918), reports a case of profound toxemia, with fatal results in a syphilitic patient under treatment for primary lesions. 0.75 gm. of neodiarsenol was given. The dose was the second one, preceded by a slightly smaller one a week before. He feels certain that the drug was responsible for the patient's death, which occurred forty-eight hours from the onset of uremic symptoms. He thinks that while the preparation in general is good, such reactions do occur and may possibly be favored by influ-

ence such as cold weather, etc., or as in this case, by the patient's occupation: that of a chemist.

MEDIAN BAR EXCISOR.

W. F. Braasch, Rochester, Minn. (*Journal A. M. A.*, March 16, 1918), describes and illustrates a new median bar excisor, which permits of accurate inspection of the conditions of obstruction of the vesical outlet. The advantages of this instrument, he says, are obvious, as it gives a satisfactory view of the prostatic urethra. Without a visualized field, unless the operator is very expert, it is evident that the base of the bladder, instead of the median bar, might easily be cut. The use of the median bar excisor should be limited to a small proportion of patients with urinary obstruction. The punch operation should be confined to cases in which the superficial median tissues obstruct the vesical orifice, and to occasional cases of involvement of the bilateral lobes in which enucleation is otherwise inadvisable.

SACRAL TABES.

G. B. Hassin and E. P. Carrol, Chicago (*Journal A. M. A.*, March 16, 1918), say that it was customary formerly to classify cases of tabes according to their localization in the cord. Cases are, however, occasionally met with in which the lesion is principally confined to the sacral roots, and they report such a one, in which the exclusive involvement of the sacral roots produced a classical picture of a lesion of the cornu medullaris, the rest of the cord being found on necropsy to be normal. The authors remark that cases of sacral tabes are scientifically and practically of great value. Their scientific value lies in the fact that they offer unusual opportunities for studying the probable course of the sacral root fibers within the spinal cord, and their practical value lies in the fact that some cases of so-called conus lesion may be nothing but tabes, and they publish their cases strongly suggesting this possibility.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 601 Cedar Street, Nashville, Tenn.

APRIL, 1918

EDITORIALS

ANOTHER "NUMBER 12."

This is Number 12 of Volume X. of the Journal of the Tennessee State Medical Association. Another year has gone, the tenth in the life of the Journal and the fourth under the present editorship.

It takes an immense amount of labor and a considerable part of the income of the Association to produce the Journal, even as it is. Few of those who receive it have even the slightest idea of the work that must be done and the hours and hours of time that must be used up in the routine of getting it out each month. All of this, however, counts for nothing if the Journal is meeting a want of the members of the Association. If it is not, then something needs to be done about it.

The cost of the Journal has increased with increased prices of commodities. Three cent postage has added materially to the expenditures, for it takes many letters and numerous movements of manuscript and other papers to secure material and prepare it properly and to otherwise provide for the monthly publication. It is certain that the cost will not decrease, and it is probable that it will grow larger during the next year.

Any decided improvement to be made in the Journal must come as the result of the efforts of the members of the Association. It was with difficulty that the necessary material for the body of the Journal was secured this year, and it is there—in the part devoted to scientific papers—that the improvement must be made if the Journal is to come to be of much greater

value to its readers. Of course when that time comes when a trained editor and a trained business manager can be employed, who can devote their entire time to the interests of the Journal, a very different status will have been established and the possibilities of the Journal will be greatly enhanced.

Has the Journal met its task worthily and with reasonable success? Has it been worth the cost? How can it be improved? Will the members of the Association who can help to improve it extend their aid to a greater degree than in the past? These and other questions should engage the thoughtful attention of the members of the Association, and especially of those in the House of Delegates, at the coming annual meeting.

TYPHOID IN TENNESSEE CITIES.

The *Journal of the American Medical Association* for March 16, 1918, presents the sixth annual survey of typhoid fever mortality in cities of the United States having over 100,000 population. Memphis and Nashville are the only cities in Tennessee included in this survey. It is indeed gratifying to note that both of them assume new standing, indicating very satisfactory improvement over former years. For a long time Memphis and Nashville received most hurtful advertisement because of their high mortality rates from typhoid. The Memphis rate for 1917 was 21.1 per 100,000 population, whereas the average rate for the period 1911-1916 was 42.5 per 100,000; Nashville's rate for 1917 was 18.3, while for the five-year period, 1911-1916, the average rate was 40.2. It is greatly to the credit of these two Tennessee cities that their typhoid death rates have been cut in half, but they have yet a long way to go before they will be where they should be with respect to this matter. The health departments of both cities have been very active during the last two years in an effort to bring down the typhoid death rate. They are to be congratulated upon the results of their work; and now, having shown what can be done, they should receive whatever aid may be necessary to effect another 100 per cent reduction.

A. M. A. AT CHICAGO.

The local Committee on Arrangements for the Annual Session of 1918 to be held in Chicago, June 10-14, is actively engaged in perfecting plans for the comfort and entertainment of the Fellows of the Association and their guests.

All correspondence with the Local Committee on Arrangements or with any of its subcommittees should be addressed to 25 East Washington Street, Chicago.

CLINICS.

The chairman of the subcommittee on clinics, Dr. Charles F. Humiston, announces that there will be a series of clinics for the Fellows of the Association on Thursday, Friday and Saturday, June 6, 7 and 8, and on Monday and Tuesday, June 10 and 11. Further announcements regarding the clinics will appear in these columns from time to time.

ALUMNI AND SECTION DINNERS.

Alumni and sectional dinners will be held on Wednesday evening from 6 to 8 o'clock so as not to conflict with other events which are being planned. The chairman of the subcommittee on alumni and section entertainment, Dr. J. H. Stowell, announces his committee is co-operating with officers of alumni associations in arranging for reunions. The committee desires, also, to assist the officers of those sections which desire to arrange for section dinners.

TENNESSEE IN THE MEDICAL RESERVE CORPS.

The following named Tennessee physicians were recommended for commissions in the Medical Reserve Corps during the month of February:

Lieutenants: R. B. Kirkpatrick, Gold Dust; H. W. Allan, Knoxville; M. B. Seligstein, Memphis; J. C. Witherington, Munford; J. H. McSwain, Paris; K. A. Bryant, Trenton; W. H. Jones, Wooldridge; O. L. Hambrick (colored) and R. L. Richardson (colored), Nashville.

Captains: W. S. Dotson, Lebanon; L. H. Milligan, Morristown; M. B. Murfree, Murfreesboro; O. N. Bryan, Nashville; D. R. Pickens, Nashville.

The names of others recommended for commissions will appear in the Journal from time to time as these are available.

A NEW REVIEW ON WAR SURGERY.

There has just been prepared in the office of the Surgeon General a new pamphlet Review of War Surgery and Medicine (March, 1918, Vol. 1, No. 1). According to the editorial note this review is to appear monthly and to be devoted to abstracts of war medical literature. This little pamphlet will furnish the medical personnel of the Army abstracts of original papers of importance, necessary information in a short compass, and prompt publication of reports which otherwise might not gain circulation.

In this first volume is a splendid review of Surgery in the Zone of Advance prepared from data written by Major George de Tarnowsky, based upon his personal observations in the French army front. It is the best description that has yet appeared in American literature of the war.

This is followed by a most readable and instructive review of the most recent data on gas gangrene, trench foot and the general principles guiding the treatment of wounds of war.

Copies of this review may be obtained by addressing the Superintendent of Documents, Government Printing Office, Washington, D. C., enclosing ten cents in stamps.

This review should be in the hands of every officer of the Medical Corps and should be of interest to the entire medical profession not in the service. The reviews are very well written and make most interesting and profitable reading.

DR. JAMES P. HANNER.

Dr. James Park Hanner died at his home at Franklin, on March 6, 1918, after an illness of about two weeks from pneumonia. Dr. Hanner was born near Franklin on July 4, 1835, and received his medical education in Philadelphia. At the outbreak of the Civil War he organized a company, with which he served in Virginia as a part of Maney's First Tennessee Brigade of the Confederate army. Later on

in the war Capt. Hanner became surgeon in Morton's Battery. After the war was over he returned to Franklin and entered upon the practice of medicine, and here and in this field his long and useful life was spent.

Dr. Hanner was a scholarly man, having devoted a very large part of his time to general study, a very kind and courteous gentleman, a brave Confederate soldier, a prominent member of the Methodist church, a Mason of exalted standing, a physician of ability, who stood high in the esteem and respect of all who knew him. With his going, another of the fast-diminishing "Old Guard" has fallen out of the ranks, leaving behind a record of service and devotion to duty which should stimulate young men in medicine to strive for all that is best in the practice of their profession.

Dr. Hanner's son, Lieut. Colonel John W. Hanner, M. C., U. S. Army, is now on duty abroad, having been called from his father's bedside just a few hours before his death.

LIEUT. DAVID KING SUMMERS.

Among the first to offer his services to his country when war was declared against Germany was Dr. David King Summers, of Chattanooga. After receiving his commission as Lieutenant in the Medical Reserve Corps, he was ordered to Camp Greenleaf for training, but only one day later received orders to proceed to an Atlantic port for embarkation, with instructions to report to General Pershing, commander in chief of the American forces in France. Upon his arrival in France, Lieut. Summers was attached to the 18th Infantry, with which he continued to serve as surgeon until his death, on March 1, 1918, from wounds received in action.

Lieut. Summers, a native of North Carolina, was 31 years of age, a graduate of the Atlanta College of Physicians and Surgeons of the class of 1914, and at the time of his enlistment was engaged in the practice of medicine at Chattanooga. He was a member of the Chattanooga Academy of Medicine and Hamilton County Medical Society, of the Tennessee State Medical Association, and of the American Medical Association.

One of the first officers from Tennessee to reach the front in France, Lieut. Summers

was the first of the medical officers from our state to fall while in active duty on the fighting line. He lies at rest in a far land with many other heroes, who, like him, made the supreme sacrifice for the sake of human liberty. His name will be honored by his fellows of the profession in Tennessee, so many of whose members are loyally serving the nation as he served, and all of whose members will find in his death a source of inspiration and determination to do what they can and all that they can to the end that his sacrifice shall not have been in vain.

YOUNG SURGEON WANTED.

I want a good young physician—one who wants to do surgery and who *can* do surgery—to accept partnership or salary. He must have \$1,000 to invest and must be exempt from any draft.

Or, I will sell practice, consisting of contract paying \$200 per month and good outside practice, together with a good drug store. Drug stock new and clean, good fixtures, good trade and good location. Stock runs about \$5,000.

Or, will dispose of either practice or drug store.

No competition in practice or drug business. Reason for selling—am not physically able to do the necessary work.

Location in East Tennessee.

Address "S," in care of this Journal.

NOTES AND COMMENT

Letters from members of the Memphis Hospital Unit and the Vanderbilt Hospital Unit, both now at work "somewhere in France," are full of cheer and full of determination to "see the thing through" to the end of the war. In these two splendid organizations Tennessee medicine is well represented in the French hospitals.

Capt. C. P. Edwards, M. R. C., Kingsport, is at Camp Greenleaf, Ft. Oglethorpe, Ga.

Lieut. W. Bruce Lunsford, M. R. C., Nashville, is at the Government Hospital for the Insane, Washington, for a course of special training in psychiatry.

Lieut. F. J. O'Connor, M. R. C., Jackson, was ordered to Kelley Field, San Antonio, Texas, in March.

Lieut. A. L. Lear, M.R.C., Sewanee, reported for duty at Camp Meade, Annapolis Junction, Md., in March.

Lieut. G. C. Conyers, M. R. C., Gates, was ordered to report for duty, in March, to Camp Gordon, Atlanta, Ga

Lieut. W. S. Alexander, M. R. C., Ridgely, is now on duty at Camp Sherman, Chillicothe, Ohio.

Capt. A. H. Meyer, M. R. C., Memphis, is on duty at Camp Shelby, Hattiesburg, Miss., after a course at the Army Medical School.

Capt. T. ap R Jones, M. R. C., Knoxville, has been ordered to Boston for a course of instruction, and upon completion to Camp Devens, base hospital.

Lieut. E. L. Wilkins, M. R. C., Dyersburg, will reprt, after completion of course at Fort Oglethorpe, to Camp Dix, base hospital.

Lieut. C. R. Center, M. R. C., Memphis, is on duty at Camp McArthur, Waco, Texas.

Lieut. T. C. Chapman, M. R. C., Brownsville, was ordered, in March, to report for duty at Camp Dix, Wrightstown, N. J.

Lieut. E. S. Maxwell, M. R. C., Nashville, is on duty at Ft. Sam Houston, Texas.

Capt C. W. Brown, M. R. C., Nashville, is in service at Ebert's Field, Lonoke, Ark.

Capt. C. T. Speck, M. R. C., Cleveland, is at the training camp for medical officers at Ft. Oglethorpe, Ga.

Capt. H. H. McCampbell, M. R. C., Knoxville, is at the medical officers' training camp at Ft. Oglethorpe.

Capt. D. M. Henning, M. R. C., Memphis, is at Camp Greenleaf, Ft. Oglethorpe, Ga.

Lieut. A. T. King, M. R. C., Jefferson City, has been ordered to duty at Newport News, Va.

Lieut. O. B. Moon, M. R. C., Bell Buckle is on duty at Waco, Texas.

Capt. W. F. Clary, M. R. C., Memphis, was dangerously ill for several weeks at Ft. Oglethorpe. The Journal is informed that he is now well on the way to recovery.

The Warden McClean Medical Auditorium was dedicated at Camp Greenleaf on March 11, the occasion having brought together a large number of men prominent in medical circles, both of the army and of civil life. Surgeon General Gorgas delivered an address, accepting the auditorium, which was erected and named in honor of a young soldier, Warden McClean, who lost his life at Ft. Oglethorpe in the early days of the war.

Lieut. J. B. Stanford, M. R. C., Memphis, is on duty at the base hospital at Camp Bowie, Ft. Worth, Texas.

Lieut. R. L. Gallaher, M. R. C., Caryville, is at Camp Shelby, Hattiesburg, Miss., on duty in the base hospital.

Lieut. G. A. Hatcher, M. R. C., Nashville, has been assigned to duty at Ft. Oglethorpe.

Well! When a professor in the State University, supposed to be the center of educational effort, allows himself to have the smallpox; and when a whole bunch of nurses in one of the largest of our city hospitals are permitted to go unprotected and to turn up with the smallpox—what's the use of preaching vaccination to the "great unwashed?"

The Co-operative Medical Advertising Bureau, 535 N. Dearborn street, Chicago, has done a good part by this Journal. Through this bureau our advertising pages have been kept reasonably full of clean advertising. You owe it to the Journal, to our advertisers, to the Bureau and to yourself to buy the products advertised in the Journal. They are the best to be had. You must have them or some like them. Why not get our advertisers' goods?

MISCELLANEOUS

DETECTION OF GALL-STONES.

G. L. McWhorter, Chicago (*Journal A. M. A.*, March 6, 1918), advises the use of a waxed tipped filiform bougie for probing the bile ducts for stones that might otherwise be overlooked. The wax tip consists of from one-half to one part olive oil and one part dental wax, both thoroughly sterilized. The wax tip has been used in probing for ureteral stones and has been recommended by Harris as late as 1912, but its use in the bile ducts has not been previously described. The wax tip should be examined under a lens before using as well as after. If while passing the wax tip a decided jump should be felt, such as might be caused by a partly ensacculated stone, the chances of obtaining a definite scratch are improved by moving it back and forth several times.

SYNTHETIC DRUGS.

In his second special article on synthetic drugs, Julius Stieglitz, Chicago (*Journal A. M. A.*, March 9, 1918), reviews the most important synthetic drugs as selected by eminent physicians who were consulted. They are local anesthetics antipyretics, antisyphilitics, diuretics, and uric acid eliminants, and hypnotics. Thus far they are simply enumerated with the names of the licensed manufacturers, which shows to the readers where and how they can be obtained. Further results obtained by the committee of the Research Council will probably be given later. Some of those that have passed the committee are in large demand, but others have not been attractive apparently, from a commercial point of view. Those here enumerated are only those considered the most essential.

NARCOTIC ADDICTION.

The military, industrial and public health features of narcotic addiction are discussed by C. E. Stokes, New York, in the *Journal A. M. A.*, March 16, 1918. He claims that in some sections of the country 90 per cent of the narcotic victims are heroin users, and nearly all of these are in the period of adolescence, and many have reached military age. It would be illogical to expect 100 per cent efficiency at the

outset of treatment of these persons, but with proper care and study many of them can be redeemed. Sooner or later the condition develops individualistic features. A chronic depression of nervous functions, and, further, this depression involves the ductless glands and other organs, causing disturbances of nutrition and emotional disorders, which are especially evident when the drug is suddenly stopped. From his experience with drug addicts, gained while in charge of an institution for their care and cure, it was clearly shown that they could be controlled by enlightened methods of discipline and administration, with proper environment. It is time, he says, that an educational drive be started, in which this problem can be taken up, stripped of its mystery and sensationalism, and the facts of the situation laid bare.

A SAFE ANTISEPTIC.

In view of the numerous reports of death and disaster following the use of bichloride of mercury and carbolic acid, it is a good thing to know that there is now available a germicidal agent which is even more efficient than these dangerous antiseptics, and which is safe. The medical profession owes much to the genius of Dr. H. D. Dakin, who has recently brought to its attention the great value of the chlorine-carrying compounds.

The most convenient of the antiseptics which he has introduced is para-toluene-sodium-sulphochloramide, best known in this country under the name "Chlorazene." In Dakin & Dunham's "Handbook of Antiseptics," we learn that this antiseptic is more powerful, when tested on blood-serum-muscle-extract cultures of the staphylococcus aureus, than mercuric chloride silver nitrate, argyrol, zinc chloride, hydrogen peroxide, phenol, and other common antiseptics. In fact, a 2 per cent solution of this antiseptic will accomplish in five minutes what it requires twenty-four hours to accomplish with a 1:1000 solution of mercuric chloride.

The most gratifying fact of all is that the Chlorazene is safe. There is little or no danger of poisoning. Some of the uses of Chlorazene are as follows:

As a gargle or spray, in all forms of sore throat, and as a therapeutic and prophylactic

wash to infected areas, as an irrigant, on compresses, as a dusting powder (Chlorazene Surgical Powder), and as a paste (Chlorazene Surgical Cream.).

In Genitourinary Diseases. As an application to venereal sores (chancre and chancroid), as an injection in the treatment of gonorrheal urethritis and gonorrheal vaginitis.

In Obstetrics Following delivery and to clean out the uterus in cases of sepsis. As a cleansing agent and deodorant in practically all diseases of women.

In Cancer and Malignant Sores and as a deodorant and germicide. agent in diphtheria, meningitis, measles, scarlet fever, tonsilitis, etc.

In Skin Diseases Eczema, acne, carbuncles, boils, paronychia, felons, and other common skin infections.

In Wounds Chlorazene may be used as a Samples of Chlorazene will be sent without charge to any physician, dentist, veterinarian or druggist in any part of the country applying to the home office of The Abbott Laboratories, Chicago. Complete literature of Chlorazene, Dichloramine-T, Chlorcosane, and other Dakin preparations, will be included.

THYROID.

In the British Medical Journal October 20th, 1917, Dr. Carver, M. R. C. P., London, emphasizes the necessity of specifying a reliable brand of Thyroids and Thyroid Tablets. He called attention to the way in which some manufacturers label their preparations.

If the doctor will demand Armour's, he will know that his patient gets a specific quantity of Thyroid tissues, because we standardize our Dessicated Thyroids and Thyroid Tablets.

Each Thyroid Tablet (Armour) contains a certain quantity of standardized Thyroids, and that amount represents five times as much fresh thyroid gland.

Whenever a preparation of any of the endocrine glands is required, the physician should specify Armour's and see that his patient gets Armour's.

NEW AND NON-OFFICIAL REMEDIES.

Sterile Solution Coagulen-Ciba (3 per cent) 1.5 Cc. Ampoules—Each ampule contains 1.5 Cc. of a 3 per cent solution of coagulen-Ciba. A. Klipstein and Co., New York City.

Sterile Solution Coagulen-Ciba (3 per cent) 20 Cc. Ampoules—Each ampule contains 20 Cc. of a 3 per cent solution of coagulen-Ciba. A. Klipstein and Co., New York City.

Tablets Coagulen-Ciba 0.5 Gm.—Each compressed tablet contains 0.5 Gm. coagulen-Ciba and 0.46 Gm. sodium chloride. A. Klipstein and Co., New York City.

Dichloramine-T (Calco)—Paratoluenesulphonedichloramide—This is said to act much like Chloramine-T, but is capable of being used in a solution of eucalyptol and liquid petrolatum, thus securing the gradual and sustained antiseptic action. Like Chloramine-T, dichloramine-T (Calco) is said to act essentially like the hypochlorites, but to be less irritating to the tissues. Dichloramine-T (Calco) is said to be useful in the prevention and treatment of diseases of the nose and throat. It has been used with success as an application to wounds, dissolved in chlorinated eucalyptol and chlorinated paraffin oil. Manufactured by the Calco Chemical Co., Boundbrook, N. J.

Halazone-Calco — Parasulphonedichloramidobenzoic acid—It is said to act like chlorine and to have the advantage of being stable in solid form. In the presence of alkali carbonate, borate and phosphate it is reported that halazone in the proportion of from 1:200,000 to 1:500,000 sterilizes polluted water. Manufactured by the Calco Chemical Co., Boundbrook, N. J.

Chloramine-B (Calco)—Sodium Benzenesulphochloramine—Its dosage for Chloramine-B (Calco) are phochloramine—It contains from 13.0 to 15.0 per cent available chlorine. The actions, uses claimed to be essentially similar to those given in New and Non-official Remedies, 1917, for Chlorazene. Its physical and chemical properties are similar to those of chloramine-T. Manufactured by the Calco Chemical Co., Boundbrook, N. J. (Jour. A. M. A., Jan. 12, 1918, p. 91).

Official Program

EIGHTY-FIFTH ANNUAL
MEETING

Tennessee State Medical Association

Memphis, Tennessee, April 9-10-11, 1918

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION 1917-18

President
E. T. Newell, M.D.
Chattanooga

Vice-President
W. O. Sullivan, M.D.
Newbern.

Vice-President
H. M. Cass, M.D.
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Vice-President
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Secretary
Olin West, M.D.
Nashville.

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Chairman
C. J. Broyles, M.D.
Johnson City.

J. F. Gallagher, M.D.
Nashville.

H. T. Brooks, M.D.
Memphis.

COUNCILORS

First District
C. P. Fox, M.D., 1918,
Greeneville.

Sixth District
W. C. Dixon, M.D., 1919,
Nashville.

Second District
S. R. Miller, M.D., 1919
Knoxville.

Seventh District
M. A. Beasley, M.D., 1918,
Hampshire.

Third District
J. A. Hardin, M.D., 1918,
Sweetwater.

Eighth District
A. B. Dancy, M.D., 1919,
Jackson.

Fourth District
Z. L. Shipley, M.D., 1919,
Cookeville.

Ninth District
T. B. Wingo, M.D., 1918,
Martin.

Fifth District
*F. B. Reagor, M.D., 1918,
Shelbyville.

Tenth District
W. T. Black, M.D., 1919,
Memphis.

*Deceased.

DELEGATES TO AMERICAN MEDICAL ASSOCIATION

1916-17	1917-18
Perry Bromberg, M.D., Nashville.	A. F. Richards, M.D., Sparta.
1916-17	1917-18
Alternate—S. R. Miller, M.D., Knoxville.	Alternate—Wm. Britt Burns, M.D. Memphis.

COMMITTEES

ARRANGEMENTS—Willis C. Campbell, M.D., Memphis, Chairman;
L. W. Haskell, M.D., Memphis; E. C. Blackburn, M.D., Memphis.

ENTERTAINMENT—A. B. DeLoach, M.D., Memphis, Chairman;
Frank Jones, M.D., Memphis; H. E. Bickford, M.D., Memphis.

MEMOIRS—Duncan Eve, Sr., M.D., Nashville, Chairman; Y. L. Abernathy, M.D., Chattanooga; J. A. Hardin, M.D., Sweetwater; E. B. Wise, M.D., Chattanooga; J. J. Waller, M.D., Oliver Springs; L. L. Sheddan, M.D., Knoxville; W. J. Matthews, M.D., Johnson City; J. A. Mitchell, M.D., Tullahoma; A. F. Richards, M.D., Sparta; I. A. McSwain, M.D., Paris.

SCIENTIFIC WORK—Olin West, M.D., Nashville, Chairman; H. P. Larimore, M.D., Chattanooga; Willis C. Campbell, M.D., Memphis.

PUBLIC HEALTH AND PUBLIC INSTRUCTION—S. S. Crockett, M.D., Nashville, Chairman; Elizabeth Kane, M.D., Memphis; F. J. Runyon, M.D., Clarksville; W. N. Lackey, M.D., Gallatin; W. K. Vance, M.D., Bristol.

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EDUCATION—J. A. Witherspoon, M.D., Nashville, Chairman; J. B. McElroy, M.D., Memphis; Marcus Haase, M.D., Memphis; E. R. Zemp, M.D., Knoxville; Wm. Litterer, M.D., Nashville.

CANCER—W. D. Haggard, M.D., Nashville, Chairman; Frank Smythe, M.D., Memphis; E. Dunbar Newell, M.D., Chattanooga.

SOCIAL INSURANCE—Wm. Krauss, M.D., Memphis, Chairman; ———, M.D., ———; ———, M.D., ———.

MEDICAL DEFENSE—S. R. Miller, M.D., Knoxville, Chairman; Jere L. Crook, M.D., Jackson; H. M. Tigert, M.D., Nashville.

HOUSE OF DELEGATES

The House of Delegates will meet each day at 8 a. m. and 2 p. m. for sessions of one hour each. Delegates are requested to attend promptly. Badges will be presented to delegates when they shall have filed credentials with the Secretary.

All meetings will be held at the Gayoso Hotel.

Members will please register at once upon reaching the place of meeting and receive badges.

Official Program

Opening Exercises Tuesday, April 9, 10 A. M.

Call to order by Willis C. Campbell, M.D., Chairman of Committee on Arrangements.

Address of Welcome, on behalf of Memphis and Shelby County Medical Society, by B. F. Turner, M.D., Memphis.

Response to Address of Welcome, on behalf of the Tennessee State Medical Association, J. W. McQuillan, M.D., Chattanooga.

Announcements by Chairman of the Committee on Arrangements.

Association placed in charge of the President, E. T. Newell, M.D., Chattanooga.

SCIENTIFIC PROGRAM

1. Presidential Address, by Edward T. Newell, M.D., President Tennessee State Medical Association, Chattanooga.
2. "A New Treatment for Epithelioma," by G. C. Savage, M.D., Nashville.
To open discussion: S. S. Marchbanks, M.D., Chattanooga.
3. "Some Unsettled Points in the Etiology of Appendicitis," by E. H. Baird, M.D., and J. P. Baird, M.D., Dyersburg.
To open discussion: A. G. Kern, M.D., Knoxville.
4. "Bloodless Circumcision with Williams' Clamp," by G. Victor Williams, M.D., Chattanooga.
To open discussion: C. F. Anderson, M.D., Nashville.
5. "Abortion—Its Prevention and Treatment," by J. W. Brandau, M.D., Clarksville.
To open discussion: J. O. Woods, M.D., Newport.
6. "A Discussion of 7,000 Industrial Injuries," by Duncan Eve, Jr., M.D., Nashville.
To open discussion: Wm. Britt Burns, M.D., Nashville.
7. "Essential Hematuria—With Report of Case and Review of Literature," by R. L. Motley, M.D., Dyersburg.
To open discussion: J. J. Cullings, M.D., Memphis.
8. "The Surgical Management of Chronic Gastric and Duodenal Ulcers," by R. L. Sanders, M.D., Memphis.
To open discussion: J. P. Tillery, M.D., Knoxville.
9. "Kidney Infections—With Report of Cases," by K. S. Howlett, M.D., Franklin.
To open discussion: Byrd Rhea, M.D., Lebanon.
10. "Report of a Case of Ovarian Hemorrhage," by O. S. McCown, Memphis.
To open discussion: H. L. Fancher, M.D., Chattanooga.
11. "Surgery of the Thyroid," by J. B. Haskins, M.D., Chattanooga.
To open discussion: E. M. Holder, M.D., Memphis.

12. "Laryngeal Tuberculosis: Its Early Recognition and Curative Treatment," by C. A. Robertson, M.D., Ridgeway.
To open discussion: B. M. Fontaine, M.D., Memphis.
13. "Where Symptoms Differ—Some Findings in Abdominal Work," by W. S. Nash, M.D., Knoxville.
To open discussion: M. C. McGannon, M.D., Nashville.
14. "Complete Intestinal Obstruction from Carcinoma of the Sigmoid and Rectum," by W. D. Haggard, M.D., and W. O. Floyd, M.D., Nashville.
To open discussion: J. A. Crisler, M.D., Memphis.
15. "Syphilis of the Stomach—Report of Cases" (Illustrated), by J. S. B. Woolford, M.D., Chattanooga.
To open discussion: J. B. McElroy, M.D., Memphis.
16. "Osteomyelitis," by E. M. Sanders, M.D., Nashville.
To open discussion: Robert Mann, M.D., Memphis.
17. "The Proper Interpretation of Bladder Symptoms," by Geo. R. Livermore, M.D., Memphis.
To open discussion: Perry Bromberg, M.D., Nashville.
18. "Conditions of Unconsciousness," by T. G. Pollard, M.D., Nashville.
To open discussion: Otis S. Warr, M.D., Memphis.
19. "Social Insurance," by Wm. Krauss, M.D., Chairman of Committee on Social Insurance, Memphis.
20. "Recent Advances in Neurological Surgery, Especially in the Diagnosis and Treatment of Brain Injuries" (Moving Pictures), by William Sharpe, M.D., New York.
21. "The Role of the Carbohydrates in Cardio-Vascular Disease," by C. P. McNabb, M.D., Knoxville.
To open discussion: W. A. Oughterson, M.D., Nashville.
22. "Surgery and the X-Ray in the Treatment of Malignancy," by W. A. Bryan, M.D., Nashville.
To open discussion: C. P. Fox, M.D., Greeneville.

23. "Hysterotomy," by L. L. Sheddan, M.D., Knoxville.
To open discussion: J. M. Maury, M.D., Memphis.
24. "Syphilitic Induration of the Vulva" (Lantern Slide Demonstration), by J. F. Gallagher, M.D., Nashville.
To open discussion: H. T. Brooks, M.D., Memphis.
25. "The Influence of Adenoids and Tonsils on the Development of the Dental Arches," by O. A. Oliver, D.D.S., Nashville.
To open discussion: E. B. Cayce, M.D., Nashville.
26. "Observations on the Use of Beck's Paste," by Jere L. Crook, M.D., Jackson.
To open discussion: Paul DeWitt, M.D., Nashville.
27. "The Surgical Treatment of Varicose Veins of the Lower Extremities," by Wm. Sailer Anderson, M.D., Memphis.
To open discussion: W. T. Black, M.D., Memphis.
28. "Dropsical Conditions and Their Treatment," by O. P. Zirkle, M.D., Kingston.
To open discussion: Geo. R. West, M.D., Chattanooga.
29. "Ununited Fractures," by Willis C. Campbell, M.D., Memphis.
To open discussion: W. S. Nash, M.D., Knoxville.
30. "Treatment of the Insane in Our State Hospitals," by W. Scott Farmer, M.D., Nashville.
To open discussion: L. E. Ragsdale, M.D., Williamsport.
31. "Pyloric Obstruction in Infants and Report of Cases," by E. J. Johnson, M.D., Memphis.
To open discussion: O. H. Wilson, M.D., Nashville.
32. "The Tuberculosis Problem—How Shall It Be Attacked?" by H. H. Shoulders, M.D., Nashville.
To open discussion: B. F. Turner, M.D., Memphis.
33. "Low Back Pains," by A. G. Nichol, M.D., Nashville.
To open discussion: J. P. Baird, M.D., Dyersburg.
34. "Surgical Disease of the Gall Bladder and Its Treatment," by J. Hugh Carter, M.D., Memphis.
To open discussion: J. S. Bachman, M.D., Bristol.

35. "A Resume of My Abdominal Operations for 1917," by E. Dunbar Newell, M.D., Chattanooga.
To open discussion: Max Goltman, M.D., Memphis.

SECTION OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Chairman—Richard McKinney, M.D., Memphis.

Vice-Chairman—T. Hilliard Wood, M.D., Nashville.

Secretary—W. W. Potter, M.D., Knoxville.

This section will meet at 9 a. m. Wednesday.

Luncheon at one o'clock at the Hotel Gayoso, as guests of the Chairman of the Section, Dr. Richmond McKinney.

Clinics at the Memphis General Hospital, conducted by the members of the Memphis Society of Ophthalmology and Otolaryngology.

PROGRAM

1. "How May We Better Conserve Vision? A Special Plea for More Effective Means of Preventing Traumatism," by L. M. Scott, M.D., Jellico.
2. "Treatment of Mastoid Disease," by J. P. Crawford, M.D., Nashville.
3. "Some Clinical Observations on Primary Infection of the Mastoid, With Report of Cases," by O. Dulaney, M.D., Dyersburg.
4. "Eye Requirements for Aviators. Report of Findings in the Examination of Several Hundred Applicants," by Robert Fagin, M.D., Memphis.
5. "Traumatic Strictures of the Larynx," by T. Hilliard Wood, M.D., Nashville.
6. "Prevailing Indications for the Complete Ablation of Tonsils and Adenoids," by N. E. Hartsook, M.D., Johnson City.
7. "Antrum Infection," by Walter S. Dotson, M.D., Lebanon.
8. "Some Case Reports," by E. B. Cayce, M.D., Nashville.
9. "Intubation, With Report of Cases," by J. T. Herron, M.D., Jackson.

BOOK REVIEWS

THE SPLEEN AND ANEMIA—Experimental and Clinical Studies. By Richard M. Pearce, M.D., Edward Bell Krumbhaar, M.D., and Charles H. Frazer, M.D., respectively Professor of Research Medicine, Asst. Professor of Research Medicine, Professor of Clinical Surgery in University of Pennsylvania. J. B. Lippincott Company, Philadelphia. Cloth, \$5.00.

This volume is composed of three groups of studies by the several authors, the first, by Dr. Pearce, dealing with splenectomy "as a means of studying experimentally in animals the relation of the spleen to blood destruction and regeneration," and as a measure for the treatment of diseases accompanied by anemia; the second, by Dr. Krumbhaar, consisting of clinical observations on types of splenomegaly with anemia, diagnostic and prognostic methods, treatment of splenic diseases by methods other than splenectomy, and, finally, on the value of splenectomy in the treatment of splenic disease; the third, by Dr. Frazer, taking up the surgical treatment of spleen lesions. It would seem that this general scheme could not be improved upon and, certainly, the individual work of the three contributors is most splendidly presented and their conclusions, many of which are not final but subject to modification if future studies demand, are apparently well justified and conservatively stated. These studies were exhaustively made, as is shown by the very comprehensive bibliography, which, by the way constitutes a very valuable feature of the book, and as is further shown by the number of experiments and the minute carefulness with which these experiments are described and observations are recorded. This work, it is believed, is a very distinct contribution to the knowledge of the subjects treated and many of the conclusions arrived at will probably stand the test of time.

BLOOD TRANSFUSION—Hemorrhage and the Anemias. By Bertram M. Bernheim, M.D., Instructor in Clinical Surgery, John Hopkins University. J. B. Lippincott Company, Philadelphia. Cloth, \$4.00.

This is a very practical treatise by one of the most persistent and experienced investigators in the field of work covered by its title. Being practical, however, does not keep the author from making his work entertaining, and from the "Historical Note" in the beginning on through to the end of the book, the reader will be interested because of the pleasing style of the author as well as for the instruction to be had. The whole matter of blood transfusion—indications, methods and fields for application—is well treated by Dr. Bernheim with theoretical considerations well nigh left out. An extensive bibliography is a valuable feature of the book, as is an

appendix including descriptions of the tests with which one should be familiar.

AMERICAN ADDRESSES ON WAR SURGERY—By Sir Berkeley, Moynihan, C.B., Temporary Colonel, A. M. S., Consulting Surgeon, Northern Command. 143 pages. W. B. Saunders Company, Philadelphia. Cloth, \$1.75.

Instructive, eloquent, scholarly, delightful! Thus we would characterize the addresses of Sir Berkeley Moynihan, delivered in this country during his visit in October and November of last year, and included in the little volume under review. The first address—"What Is the War About?," or "The Causes of the War"—has not been excelled by the utterance on this subject of any man in any land. It goes down to the rock-bed basis and is an original analysis of the situation, enlightening, simple, profound—is simple and profound at once, for profundity is not reached until things on the way thereto are made simple. He who has not read this address has missed the real explanation of this war.

"Gunshot Wounds and Their Treatment," "Wounds of the Knee-Joint," "On Injuries to the Peripheral Nerves and Their Treatment," and "Gunshot Wounds of the Lungs and Pleura" are other four addresses, all of which are fully up to the standard of Sir Berkeley's scientific utterances. These, of course, deal entirely with war conditions.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY (Dorland).—New (9th) Edition Revised and Enlarged. 119 pages with 331 illustrations. Containing over 2,000 new terms. W. B. Saunders Company, Philadelphia, 1917. Flexible leather, \$5.00; with thumb index, \$5.50.

The only doctor who does not need a dictionary is that one who does not read to learn or the other one, only a shade worse, who does not read at all. And since doctors of that sort don't count, there are no real doctors who can maintain themselves as doctors without having a good dictionary, such as Dorland's undoubtedly is. A good dictionary is, first of all, one that is usable. Dorland's can be held in one hand and have its leaves turned easily with the other—it's not bulky nor heavy. It must contain the terms and words that are in use—the old and the new. Dorland's has them, as a test will prove. It must give definitions that define, and must have in it illustrations that illustrate—Dorland's does and has. It must give pronunciation and derivations—Dorland's does. The arrangement must be such that words can be found without undue search—Dorland's is so arranged. These are the essential things and Dorland's dictionary has them. This is not an ad., but a review based upon an every day use of Dorland's dictionary.

POST GRADUATE MEDICINE. Prevention and Treatment of Disease—By August Caille, M.D., Emeritus Professor of Medicine and Consultant to Department of Pediatrics, New York Post Graduate Medical School and Hospital, New York. D. Appleton and Company, New York, 1918.

There are those who, armed with an instrument such as Caille's book, would go out to practice medicine, unafraid and without other dependence for information concerning the treatment and prevention of disease. This book is of that kind in which the short-cutter and the superficial glory. But because men are to be found who will be satisfied to work in very narrow lines is not a reason for considering a work of this nature as of small worth. The fact is that the book is a splendid thing on treatment and prophylaxis, a book which will prove most helpful to any practitioner. For the physician called upon to care for conditions which he sees very seldom, especially minor conditions, this will prove a work worth having, for a very remarkable amount of information concerning minor ailments, technique of diagnostic and curative methods, tests, formulae, diet, etc., etc., is incorporated, all of which is presented in a concise, yet pleasing and instructive manner. Tuberculosis, syphilis, malaria, typhoid, fever, and, in fact, all of the more important general diseases are well considered in a manner commensurate with their importance. The illustrations are very good indeed, serving well the purposes for which they are intended.

A TEXT BOOK OF THE PRACTICE OF MEDICINE—by James M. Anders, M.D., Professor of Medicine and Clinical Medicine, University of Pennsylvania. Thirteenth Edition, thoroughly revised with the Assistance of John M. Musser, Jr., M.D., Associate in Medicine in University of Pennsylvania. 1259 pages, fully illustrated. W. B. Saunders Company, Philadelphia. Cloth, \$6.00.

Anders' Practice has, from its first edition, had the enthusiastic endorsement of a very large body of readers and students. This new thirteenth edition, with the most splendid revisional work that has been done on it, should retain all the old friends of former editions and gain many new ones for itself. There is an evidence of freshness and new strength in the new work that is most pleasing, while all the vigor of former editions is retained. Where necessary to comply with the more modern requirements, a new classification has been adopted. Much of the newest information on hitherto ill understood subjects will be found included in newly added matter, while changes intended to bring the book fully abreast of the times have been made in rewritten parts. Some few subjects have received less consideration than heretofore and we are not sure but that some have suffered by abbreviation. In the treatment of the subject, pellagra, Goldberger's work is not mentioned, which fact does the author no particular credit.

THE THIRD GREAT PLAGUE—A discussion of Syphilis for Everyday People—by John H. Stokes, M.D., Chief of the Section of Dermatology and Syphilology, the Mayo Clinic. 204 pages, illustrated. W. B. Saunders Company, Philadelphia. Cloth, \$1.50.

The "everyday people" are those who sadly need to be told about syphilis and its devastation. It is indeed time that they should be made to fear the disease that is responsible for the major damage to health and life in the way that they now dread the spectacular epidemic disease, that quickly comes and as quickly goes. It is the persistent, ever present malady, like syphilis, which *must* be brought to the understanding of the whole people if the public health is to be conserved, and in the little book under review this necessity is well met. The broad problem, with all of its lesser inside problems, is discussed in a manner which should impress its importance upon the average mind and which makes the subject matter readily understood. Syphilis as a social problem, diagnostic tests, treatment, cure, prophylaxis, moral and personal, and syphilis and prostitution are among the subjects discussed. Dr. Stokes does not believe that the time has yet come for making syphilis a reportable disease.

TUMORS OF THE NERVUS ACUSTICUS and the Syndrome of the Cerebellopontile Angle—by Harvey Cushing, M.D., Professor of Surgery at Harvard. 292 pages with 262 illustrations. W. B. Saunders Company, Philadelphia. Cloth, \$5.00 net.

A detailed study of thirty-six cases selected from the largest series of acoustic tumors yet verified in a single operative clinic, with the facts and figures relating to them, set down in the careful and thorough scientific manner which has always characterized the work of Dr. Cushing, certainly constitutes a most important contribution to American surgical literature, especially when with this analysis so much collateral matter as is included in this monograph is considered. Etiology, symptomatology, pathological anatomy, diagnosis and treatment are discussed in several chapters, the most important and practically instructive from a general standpoint being the two devoted to symptomatology and diagnosis. As to etiology, while Dr. Cushing presents the formed opinions of numerous workers, he does not commit himself. The surgical procedures of other operators and the author's own surgical methods are described in the chapter on treatment. Dr. Cushing is optimistic as to the future of surgery in this particular field and it is to be hoped that he, who more than any other in America, has developed the field, will be spared to perfect methods of treatment which will finally justify his optimism and reward his courage and his splendid determined efforts.

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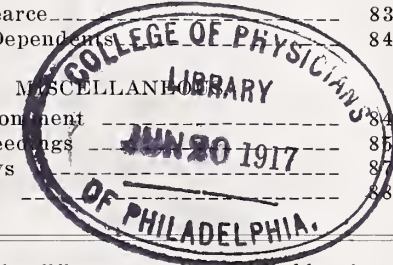
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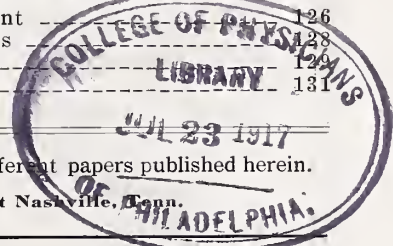
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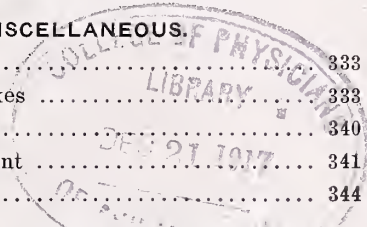
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