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# THE LOG BOOK

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PUBLISHED MONTHLY BY THE DES MOINES STILL COLLEGE OF OSTEOPATHY

Volume 20

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NUMBER 1

## Osteopathic Student Deferment

Because of the fact that there has been much confusion and misunderstanding regarding deferment of osteopathic students, it is desirable at this time that we make a frank statement regarding such deferments. We have been instructed that the OPM has advised the Selective Service System that it is desirable that osteopathic students and osteopathic physicians be deferred because of the importance of their services as physicians to the civilian population. We understand this to be a defense mechanism of great importance because of the anticipated shortage of physicians. To further clarify and give our authorization for such statements, we are presenting on this page a copy of the Selective Service bulletin under which we are operating. There has been no change in these instructions.

As a further effort on the part of the osteopathic colleges to support the Defense Program the American Association of Osteopathic Colleges at their called meeting in Chicago on December 27, passed a motion indicating their willingness and intention to present the four year osteopathic course in three years by doing away with summer vacations. The details and mechanism for this important change are being worked out by each of the osteopathic colleges. This step has been taken to further support the Defense Program thus expediting and increasing the availability of osteopathic physicians and surgeons in this time of crisis. The osteopathic profession is not only willing but ambitious to contribute in every way possible to the success of all defense measures instituted and maintained by the Government.

—A. D. B., D. O.

## Diagnostic Procedures

### Number IV Classification of Anemias

It is one thing to perform the necessary laboratory tests, and another thing to evaluate them in the light of physical findings and other data on the patient, so that a diagnosis may be established and logical treatment instituted. This is particularly true in the case of the anemias.

If a physiological approach is taken, the significance of anemia is greatly simplified. The number of erythrocytes in the circulating blood and the amount of hemoglobin contained in them

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## NATIONAL HEADQUARTERS SELECTIVE SERVICE SYSTEM

21st Street and C Street, N. W.  
Washington, D. C.

★ ★ ★ ★

August 18, 1941

MEMORANDUM TO ALL STATE DIRECTORS (1-217)  
LOCAL BOARD RELEASE (23)  
EFFECTIVE DATE: AT ONCE

THIS MEMORANDUM CANCELS AND REPLACES ORIGINAL 1-191.

SUBJECT: MEMORANDUM 1-191 — STUDENTS OF OSTEOPATHY AND OSTEOPATHS (111)

Under date of July 16, Headquarters Memorandum 1-191 was issued. Since that time we have received numerous requests for the publication of the full report from the Office of Production Management. The Office of Production Management reported as follows:

"There are currently 10,000 licensed osteopaths practicing in the United States. It is estimated that this number will be reduced by about 460 in 1941 — 300 due to death and retirement and 160 due to induction under Selective Service. Partially offsetting this loss in osteopathic manpower will be the entrance of 390 graduating students (allowances here made for those who may be inducted) into the profession during the year. Thus, the net loss in actual number of practicing osteopaths for the year 1941 will amount to about 70 or 0.7% of the current number. Obviously such a reduction cannot be considered as liable to impair either the amount or the quality of service rendered by the osteopathic profession to the civilian population.

"However, since the directives of the Selective Service Act provide for the 'maintenance of national health, welfare, and interest' in civilian as well as military life, it is desirable to take one other factor into consideration. The normal number of medical physicians available to serve the civilian population will be substantially reduced in 1941. Over 9,000 will be called to serve the armed forces, many are devoting considerable time as examiners on Local Draft Boards, and still others will volunteer for service abroad. No means will be available to meet the resultant deficiency in civilian medical care unless some of the vital services are performed by persons competent to supplement the work of regular physicians. For such purposes, it is possible that the services of osteopathic physicians will take on considerable significance.

"All approved osteopathic colleges currently give general training in surgery and obstetrics, and in the majority of States graduates are licensed to practice in these two fields. Where this is true and where the practitioners are qualified by training, and are licensed to perform such civilian services as may necessarily be left undone by other members of the medical profession, it seems that the national interest would best be served by permitting osteopaths to serve in their civilian capacity rather than in the armed forces, where their professional skills would not be employed."

The provisions of Headquarters Memorandum 1-62, Occupational Deferment of Students and Other Necessary Men in Certain Specialized Professional Fields, may be extended by agencies of the Selective Service System to include students of osteopathy and osteopaths.

In applying these provisions there must be no deviation from the clear statutory prohibition against group deferments. The local board has full authority and responsibility for deciding whether or not a registrant is a necessary man and whether he should be selected or deferred. It must consider all of the evidence submitted in connection with each individual case and must decide each case on its particular facts.

(Signed) Lewis B. Hershey  
Director

## EMBRYOLOGY

### Fetal Physiology

The most superficial observations of neonatal behavior are sufficient to indicate the tremendous changes that take place between birth and adulthood. Moreover, it is reasonable to assume that the prenatal changes in function are even more profound than the postnatal. Allusion was made in the first of this series of articles (Log Book, September 1941) to the fact that at any instant in the process of development the embryo is an individual, complete at the moment, but subject to change. Recall, therefore, that the physiology of the embryo will at first be a cytophysiology; later a histophysiology; and probably not until five to eight weeks of development have taken place will there be a true organophysiology. When organs begin to function as such, let us not confuse the function of the embryonic organ, which differs both in structure and environment, with that of the adult. With the increase in age and differentiation of the embryonic tissues, there will be an increasing diversity of function of the component cells, and also an increasing amount of cooperation between cells, when organs are constructed out of the newly formed tissues.

Therefore, the behavior of the fetus or any of its parts at any one time is sufficient to the organism at that time; as the fetus changes anatomically, so also must its physiological processes change—not only because its structure has changed but also because this altered structure, with newly acquired, and perhaps also lost, abilities, has created a new ecological system for the embryo. Consequently, the term "physiology of the fetus," in that it tends to be misleading, is a misnomer, for the reason that there is truly a changing and developing functional pattern, rather than a static situation as implied by the former term.

In the study of human fetal physiology there are two distinct problems: firstly, the development of intraembryonic functions (Continued on Page 3)

## Minnesota Convention

On January 11, Richard Rogers delivered a six hour symposium on the subject of "Military Medicine," before the Minnesota State Osteopathic association. Mr. Rogers is teaching the course of Military Medicine, for the first time at Still College this semester.

## AOF

We are glad that everybody arrived safely from snowbound vacations. We hope that these vacations were happy ones despite the wintery weather.

With the advent of 1942 comes more forcibly the uncertainty of the future. To witness the splendid spirit of confidence in our profession and country as is so evident at school makes one proud to be affiliated with such a group. "V," yes, that's it, for our country and profession.

The fraternity will sadly miss and long remember Ed Kanter and Dave Adelman. They graduate from D. M. S. C. O. carrying with them memories of four eventful years, spent learning the intricacies of the human mechanism. We know that, in leaving, they carry forth, together with the rest of the graduating class the banner of Osteopathy and a concept born of belief in a structural integrity governing physiological harmony.

A survey of the alumni of L. O. G. find all in good health and doing well in practice. Dr. Maxwell N. Greenhouse is now serving as President of the Milwaukee County Osteopathic Society. We extend greetings to our alumni together with salutations to the Osteopathic Profession to a New Year blessed with Divine Guidance.

## ΔΩ

The Deltas are expressing their appreciation for a new year by making a contribution to the Civilian Defense Program. This was decided, with other momentous matters, at the delightful Christmas meeting at Maxine Seablom's apartment. We were well entertained, transacted such important business as the election of officers for the new year, and exchanged small gifts. The most appropriate and valuable of these doubtless, was the presentation of a booklet for defense savings stamps, and a stamp to start the way to a twenty-five dollar bond.

Another thought for the year is being carried out in furnishing milk for two months to a family outside the city. They are clinic patients, with no provider, and sorely in need. We hope by this token to show our interest in those who need the defense of better food in order to grow into productive citizens.

The installation of our new officers and the postponed initiation of new honorary members will take place very soon, and we hope to make it an occasion to be happily remembered for the girls and honored ladies.

The new semester begins very soon—and wouldn't it be grand if we could have some new girls in school? They are needed especially in these days when the men are in doubt as to the draft situation, and we are eager to have them join us for our own personal satisfaction. Come on, alumnae, send us women!

—M. K.

## ATLAS CLUB

At a regular business meeting held at the Club on last Monday evening the officers for the coming semester were installed and assumed their duties. The Club has chosen the following men to lead the organization for the next semester and we are all confident that our fraternity is in capable hands.

Our new Noble Skull will be Paul Taylor who will be aided by Bob Patton as Occipital. Sacrum will be Carl Waterbury, Receptaculum will be Joe Cullen, Stylus will be Paul Senk while the office of Styloid will be filled by Jack Merrill. The office of Pylorus will continue to be filled by Gordon Elliott who has done a fine job of handling the financial end of things in the past.

It is with a great deal of pleasure that we look forward to the new semester under these new men, and I wish, on behalf of the entire fraternity to pledge our full support to them. Congratulations, fellows.

—V. S., Stylus

## ΨΣΑ

The Gamma chapter is bringing to a close a very successful semester by honoring its graduating seniors with a banquet on January 15, namely: Donald Brail, William Ferguson, Marvin Ford, Jerome Robb, and Patrick Wood.

On December 9 a banquet meeting was held at the Garden of Italy with Dr. Wagner, head of the State Serum Center, as the principal speaker.

Election of officers was held at the Atlas Club January 6 with the following men holding the reins. Phil Reames, president; Lou Radetsky, vice-president; Hal Beals, secretary; Dick Bayne, corresponding secretary; Donald Woods, treasurer; Roger Anderson, reporter, and George Lewis, chaplain.

The scholastic awards this year went to Carl MacAdams, Carl Waterbury and Lou Radetsky.

Psi Sigma Alpha takes this opportunity of wishing the school student body and those associated with the osteopathic profession a victorious year.

—P. T.

## O.M.C.C.

The Osteopathic Women's College Club wishes to extend greetings and best wishes for the New Year to the members of the profession and their families and friends.

The first scheduled meeting of the year was postponed due to the inclement weather. Instead we held our first meeting of the new year January 13th at the East Des Moines Clinic. The program chairman for the evening was Nadine Taylor. We listened to and learned of the work of the Red Cross and what we can do to help, told to us by a representative of the Red Cross.

—P. S.

## ΦΣΓ

At a regular meeting December 1, 1941 Phi Sigma Gamma had election of officers. Those elected were: Norman Fox, President; Phil Reams, Vice-President; Herb Clausung, Secretary; Glenn Deer, Treasurer; Doug Frantz, Sub Treasurer, and Dave Heflen, Sergeant-at-Arms. These are all good men and the house should accomplish much this semester.

On the evening of December 12, there was a stag party at the Chapter House. This was in honor of the seniors who had just passed qualifying examinations. A good time was had by all.

We did not have a work night this last month because of the holidays. There will be one soon and we hope to have Dwight James as the speaker for the evening.

Our Christmas party was on the evening of December 19. Brother Bill Rodgers was in charge of the refreshments and as usual proved very capable. Again everybody had a good time.

Our Senior Banquet this year will be held on the evening of January 14, 1942. We would be very happy to have any of our alumni present.

—H. P. C., Sec'y.

## ITS

On Wednesday evening, December 17 Iota Tau Sigma met at the home of Dr. Byron Cash. At this meeting thirteen men received their last degrees and pins. The men who became active members are: Bert Adams, Larry Belden, Hilden Blohm, Robert Bennington, John Halley, Thomas McWilliams, Edward Mossman, Frank Nasso, Gerald Rosenthal, Jack Shaffer, Charles Schultz, and Cyril Des Lauriers. We wish to congratulate these men and welcome them into the ranks of Iota Tau Sigma. We were very happy to have Doctors Steffen, Sloan, Kelsey and Fischer, Des Moines alumnae present at the meeting and taking part in the initiation.

Loyola Gaudet, Ray Pinchak, Stanley Staab, and Robert Gustafson pledged the fraternity early last fall and will receive their first degrees at an early date.

Following the initiation a short business meeting was held. Plans were made for the senior banquet in honor of William Ferguson who graduates in January. It was decided to invite the members of the sorority as our guests. Elaborate plans are being formulated for this occasion. At the conclusion of the business meeting we were served a very delightful luncheon by Dr. and Mrs. Cash.

Brother Jack Shaffer was the unfortunate victim of an attack of acute appendicitis and was operated upon December 22. He is convalescing nicely and we expect him back in a few days.

—E. C. M.

## DESERT-ATIONS

Santa Claus smiled bountifully on the little cottage at the edge of the desert. Morrie came from Camp Claiborne a thousand miles away and his wife Marj made the trip from Des Moines arriving only a few hours after the Staff Sergeant. Lt. Grigsby had orders to not leave El Paso so we journeyed to Frances' home to see that part of the family which now consists of the daughter, her hubby and two children. All of which makes Ole Doc Halladay a grandpa for sure with this something new added in the form of a grandson late in November. The problems of the war were definitely settled by the Staff Sergeant and the Lieutenant in the family. It was a grand reunion and we hope it can be repeated another year. In the meantime we all have certain duties to carry out and even tho the time seemed all too short we fully realize that there is much to be done.

Another fine gift from Santa was the visit of a patient of whom I am very proud. A little over ten years ago a baby girl was given up to die by several specialists in Des Moines. Some of you who were in class at that time may remember the case of Hydrocephalus that came out so well under osteopathic treatment when everything else failed. That little girl, now ten years old, stopped with her mother and father to say hello and Happy New Year to me and it was indeed a happy moment to see her in excellent health and as bright as a dollar. We had dinner together at La Posta and recounted the trying days when her thin thread of life seemed to almost break. Holiday gifts such as these do not come wrapped in tinsel. They are solid gold and increase in value as the years roll along.

The turn of the calendar brings to mind the coming ceremonies in honor of a graduating class and the week following we welcome a new group of Freshmen. In spite of the conditions under which all of us must work for a while these new osteopathic physicians will find plenty to do. With many physicians in the service, those who will not be called will have to do double duty and be prepared for emergencies. I want to congratulate the Seniors who are graduating. Osteopathy needs hundreds more like you, prepared to serve in the complete capacity of well trained physicians.

I hope the entering class more than fills the places vacated by the graduates. Your first year is the only long one for the others will pass too quickly as the study becomes more interesting each semester.

In a short time the desert will awaken and blossoms will begin to dot the mesas. We hope your plans and aspirations will soon come to full bloom and bring to you the pleasure of accomplishment and success thruout the year 1942.

—H. V. H.

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor .....Arthur D. Becker

Co-editor Richard F. Snyder, B.S.

Osteopathy Without Limitation

## Civilian Defense

As a volunteer measure for recognition in the Civilian Defense Program of the city of Des Moines, the May Class of 1943 of Des Moines Still College of Osteopathy recently conducted a survey on the faculty and student body to determine each member's individual blood type. According to the Moss system of blood-grouping, the results of the tests,—conducted on 122 members available at the time the project was carried out,—were as follows: Type I, 1.6%; Type II, 27%; Type III, 11.5%; and Type IV, 60%. A person with blood of Type I is commonly known as an "universal recipient," and a person with Type IV, an "universal donor." This information, together with the results of a serological test conducted on each student, has been accurately determined and permanently recorded so that he may be readily contacted if any emergency should arise requiring whole blood of his particular type.

Much credit is due both the College faculty and the laboratory assistants for placing at the disposal of the students the extensive equipment of the Clinical Pathology Laboratory without which these tests could not have been run. It is interesting to realize, however, that the program for the future application of the acquired data, and in fact the whole project was decided upon and is being performed solely by the students themselves in a desire to further the practicability of their course in Laboratory Diagnosis, and also in Military Medicine,—a comparatively new subject that was added to the curriculum of the College several months ago.

Through the combined efforts of each member of the Junior Class of Des Moines Still College of Osteopathy much work is being done in this particular phase of Clinical Laboratory Diagnosis, and to further this activity the class has volunteered its services to the Civilian Defense of Des Moines for any assistance within its capacity.

—Gordon L. Elliott

## EMBRYOLOGY

(Continued from Page One)

which either serve the purpose of the embryo temporarily or persist in modified form in the adult; and secondly, the feto-maternal relationship. The first is true physiology as the term is ordinarily understood, whereas the

## WHAT IS P. & P. W.

There is an old saying, that "great trees from little acorns grow." I question whether anyone concerned in the initiation of the Public and the Professional Welfare Committee could have foreseen at that time the far reaching value and constructive accomplishments which were to eventuate as the result of that beginning. The Public and Professional Welfare Committee through its counselor Mr. Harry E. Caylor and the members of the committee has become an activity of outstanding importance, in the American Osteopathic Association. Its work reaches directly to every osteopathic physician in practice and every osteopathic institution in existence. Its function is to make known to the public the availability of osteopathic service and to enable the osteopathic profession to better serve the public.

It is the great public informing mechanism for osteopathy and the osteopathic profession. Along these lines there has been accomplished far more than most of us realize. As a part of the Defense Program and in order to make more osteopathic physicians and surgeons available and thus serve in the maintenance of national health, welfare and interest of the civilian population, it is necessary that more osteopathic students be enrolled in our osteopathic colleges. The P. & P. W. committee has recognized the importance of this demand for osteopathic service. Its members have recognized that in no way can the osteopathic profession more surely serve than in increasing the availability of osteopathic treatment and care. To this end the P. & P. W. committee has decided to throw its strength behind this foremost osteopathic project and make the matter of student selection and student enrollment a major part of its service to the public during this period of great national emergency. The Federal Offices of Production Management and the Selective Service System have indicated in their bulletins the desirability of making osteopathic physicians and surgeons available in the capacity in which their professional skills can best be employed.

The ability of the Public and Professional Welfare Committee to serve in this great emergency program, is contingent upon the amount of money with which it has to work. This is a program which carries with it many opportunities as well as responsibilities, presenting themselves to the P. & P. W. Committee, it is imperative that every osteopathic physician make a prompt contribution to the extension of P. & P. W. activities. Send your check for five or ten dollars today to Central Office, earmarked for P. & P. W. Disregard former contributions and add this much additional. Many laymen, friends of osteopathy, would no doubt be willing and glad to contribute to these activities if the matter were made known to them. In no way can individual members of the osteopathic profession make a contribution at this time that will better serve in a dual capacity, that of building for greater and more available osteopathic services to the public, and as well, assisting in a Defense Program mechanism of first importance. Get back of your committee in one of the greatest opportunities in public service ever presented to the osteopathic profession.

—A. D. B., D. O.

second is more properly regarded as a study of fetal ecology.

Although the problems as outlined are easily visible, their solutions are not so obvious. For social and technical reasons it is not possible, except under extraordinary circumstances to have available human subjects for observation or experiment. The bulk of the pertinent data must therefore be derived from other animals. As indicated by numerous instances, to be cited later, such methods may be inaccurate or even misleading.

The inapplicability to humans of many data observed in lower animals arises from two major sources: in the first place, differences between adult physiology of the human and the animal concerned, and secondly, the differences in relationship of the fetus to the mother in different species. The latter difference implies variability of placental structure, period of gestation and degree of development accomplished during the gestation pe-

riod.

Because of the variables concerned and the exacting conditions imposed by the very mechanism of mammalian development, there are still many phases of fetal physiology which need elucidating. However, the work which has been done in this field up to the present time has been summarized by Windle (*Physiology of the Fetus*, Saunders, 1940), and his summary will be consulted freely in subsequent articles which will review fetal functions according to body system.

—Hugh Clark

## Diagnostic Procedures

(Continued From Page One)

depends upon the hemogenic-hemolytic balance of the body. On the one hand, the bone-marrow manufactures red-blood cells at the rate of about one trillion per day and on the other hand, the spleen, liver and other organs destroys the red-blood cells which

are worn out at the same rate. Thus, in a normal individual the total red-count is maintained at about 5,000,000 per cubic millimeter of blood. In the main, there are two types of anemia.

### I. ANEMIAS DUE TO BLOOD LOSS AND OR INCREASED BLOOD DESTRUCTION.

1. Posthemorrhagic anemias
  - A. Acute
  - B. Chronic
2. Hemolytic anemias
  - A. Chemical hemolytic anemias
  - B. Specific infections
  - C. Increased fragility of erythrocytes
  - D. Endogenous hemolysins.

### II. ANEMIAS DUE TO DEFECTIVE BLOOD FORMATION.

1. Iron deficiency anemias (hypochromic normocytic or microcytic)
2. Anemias due to lack of the specific anti-anemic factor (hyperchromic macrocytic)
3. Aplastic anemias.

In evaluating the laboratory findings for the diagnosis of anemia we are concerned in particular with: 1) Hemoglobin percentage (or grams per 100 cc.)

- 2) Total erythrocyte count
- 3) Color Index
- 4) Total leucocyte count
- 5) Study of stained smear (differential or Schilling).

The first three points are most important. Here are some possible combinations of findings:

- 1) Normal total red-count, possibly 4,800,000.  
Hemoglobin, possibly 60%  
Color index, 0.62

Such a patient has probably been living upon a diet low in iron and the bone-marrow has found it necessary to place a smaller amount of hemoglobin in each individual red-blood cell, as indicated by the color index. Treatment would consist of administering iron in some form so that the bone-marrow will have the necessary material to manufacture hemoglobin in larger quantities.

Just this word about the expected results from anemia treatment. The life of a red blood cell is about 30 to 40 days. There are about 30 trillion erythrocytes in the blood stream of an individual with a total count of 5,000,000. To maintain the hemolytic-hemogenic balance, 1 trillion are destroyed daily and 1 trillion manufactured to replace those lost. The iron administered, can not be added to those cells already formed and in circulation, but the new cells formed daily will contain progressively more hemoglobin. Therefore, improvement in the blood picture will depend upon the rate at which the bone-marrow will be able to utilize the raw material supplied for the formation of hemoglobin, and to place in the red cells as they are released. In some patients there will be a definite change in a few weeks, while in others several months will be necessary to produce noticeable results.

In the next article additional cases will be given.

—O. Edwin Owen, D. O.

## I. S. O. P. S.

## Home Guard

C. N. Stryker, D. O., Sheldon, was appointed by Governor George A. Wilson on December 18, 1941, as a Captain of the Iowa State Guard commanding Company B at Sheldon.

## Civilian Defense

D. H. Grau, D. O., and R. R. Pearson, D. O., of Muscatine, were duly named and appointed on December 20, 1941, as members of the medical unit of the Muscatine County Civilian Defense Council.

Carolyn Barker, D. O., Fort Dodge, has been appointed by Governor George A. Wilson as a member of the Webster County Civilian Defense Council.

The December 15 issue of The Log Book listed the names of those appointed by President Jordan as County Chairman of the Society's Council on Defense and Preparedness, representing the profession in their respective Counties in the Civilian Defense program. The appointments were for all Counties in which County Civilian Defense Councils had been selected by Governor Wilson up to that date.

Since that time Governor Wilson has named Civilian Defense Councils in additional Counties, and, in turn, President Jordan has appointed the following physicians to serve as County Chairmen representing the Society's Council on Defense and Preparedness in such Counties:

Eunice Hall, Independence, Buchanan County; D. E. Hannan, Perry, Dallas County; H. B. Willard, Manchester, Delaware County; J. L. Craig, Cresco, Howard County; W. J. Morrison, West Bend, Palo Alto County; Bernice W. DeConly, Council Bluffs, Pottawattamie County; A. G. Shook, Seymour, Wayne County; A. L. Lundgren, Fort Dodge, Webster County, and Charles H. Potter, Forest City, Winnebago County.

Governor Wilson, as State Director of Civilian Defense, has been duly notified of these appointments by President Jordan.

## Board of Trustees

The Board of Trustees met at the Savery Hotel, Des Moines, on Sunday, January 11, pursuant to call of President Jordan. Many problems were considered and determined.

The following Department and Committee Chairmen were also present, by invitation of the President: J. K. Johnson, Jr., Chairman, Department of Professional Affairs; D. E. Hannan, Chairman, Department of Public Affairs; Dale S. House, Chairman of the Industrial and Institutional Service Committee; H. A. Graney, Chairman of the Hospitals Committee; and S. H. Klein, Chairman of the Committee on Defense and Preparedness.

## Convention Exhibits

The following companies have already contracted for exhibit

space at the Forty-Fourth Annual Convention of the Society to be held at the Savery Hotel, Des Moines, on May 6 and 7, 1942:

The Bovine Company, Chicago; Mellin's Food Company, Boston; M. H. Newgard X-Ray Company, Des Moines; H. G. Fischer and Company, Chicago; and The Standard Chemical Company, Inc., Des Moines.

## Osteopathic Hospital

L. W. Jamieson, osteopathic physician and surgeon, formerly owner and operator of the Jamieson Clinic and Hospital, Wayne, Nebraska, has moved to Sioux City where he has opened a new osteopathic hospital to serve the needs of the people of that section of the State. He is receiving the wholehearted co-operation of the osteopathic profession in the Sioux City area and the Iowa Society takes this opportunity to wish him the best of Good Luck in this new and decidedly meritorious undertaking.

## Radio Committee

President Jordan has named and appointed the following physicians as members of the Radio Committee of this Society, of which Dr. O. Edwin Owen is Chairman, to represent the profession from a public service radio standpoint at the radio station set forth following their respective names:

Dale S. House, Dubuque, station DKTH; L. A. Nowlin, Davenport, station WHBF; I. S. Lodwick, Ottumwa, station KBIZ; J. W. Peterson, Waterloo, station WMT; Leo Sturmer, Shenandoah, stations KMA and KFNF; W. C. Gordon, Sioux City, stations KSCJ and KTRI; and Byron A. Wayland, Cedar Rapids, station WMT.

The Division of Public and Professional Welfare of the American Osteopathic Association has started an entirely new series of radio programs, the public keynote of which is "Defend Your Health. Keep Physically Fit to Do Your Part for Victory."

President Jordan's appointments are in tune with this nation-wide effort of the osteopathic profession in promoting the general welfare through this great radio "health and fitness" drive in the "Victory program."

Additional appointments will be made by President Jordan in the near future.

## Applications for Membership

Wm. F. Moore, Grafton.  
Roger V. Templeton, Grimes.  
L. A. Ford, Lamont.  
—Dwight S. James, Sec.-Treas.

## Pursuit for a Reason

I would like to make a slight correction relative to a statement in the last part of the last installment of this series. The statement as printed was that "Jaundice with pain fades completely when gangrene of the viscus develops." Where the Jaundice came from to color that sentence, I don't know, but the

point remains that when gangrene of a viscus develops pain is relieved immediately. Where death of the part develops, the sensory nerves in the area are devitalized also is the ending of those nerves that must receive the sensory impressions, heightened by edematous pressure, relative acidosis and the other products of inflammation. They are the nerve endings and fibers that relay to the cord the increased number of afferent impulses and create a degree of segmental hyper-irritability adequate to initiate the radiation phenomenon with the resultant expression in the somatic area of higher sensibility of pain, muscle contracture, hyperesthesia, etc.

The matters of referred pain, reflex expression, reflex effect, synapse and synaptic resistance, are such vital factors in Osteopathy and consequently to the entire healing are in the future, that we will have to concern ourselves more and more with them in the future. We will render all applications of vegetative anatomy and physiology directly to such investigators as Still, Mackenzie, Head, Hilton, Harvey, Hurst, Capps, Brain, Ross, Carlson, Lenander, Morley, Sheehan, Carmichael, Woollard, Cannon, Marclay etc. and to our orthodox physiologies, Best and Taylor, Hoyell, MacLlod etc.

The first factor that must be considered is the synapse. Since we were coelenterates we have possessed nervous systems in which polarity and specific direction of impulse transmission are dominant characteristics. The synapse, absent in the coelenterate and lower forms, plays an important part. Afferent or associational fibers do not end in direct contact with the receptors of the next neurone but end in synaptic relationship around a number of receptor processes of a number of cells. This small gap or synapse area is of great interest, of greater importance and we are just beginning to learn about it. The synapse has been described as a spark-gap demanding a certain speed of impulse transmission to make the jump. Lesser velocities are screened out. Also the synapse has been referred to as a pop-off valve requiring the development or accumulation of sufficient quantity or pressure of nerve force to result in discharge suddenly across the synaptic gap. Now, as is frequent, just when we are getting to know a little about the synapse area and its function other investigators are challenging the existence of the synapse as such and the secretory theory of acetylcholine excitation of nerve cells becoming more prominent. We will utilize the proven and promising points of the arguments without arguing ourselves for we are interested in the synapse for a reason far more important and vital than usually spurs professors to immerse their heads in the tub of pure science.

The most characteristic factor about the synapse is the resistance it offers to the passage of

nerve impulses. It is normally like a mesh that screens out the large multitude of smaller items and permits only the larger ones to be saved for practical use. Synaptic resistance is a variable factor however. It can be increased or decreased by will, by practice, by use, by treatment as well as by disease and many other factors. Of first importance is the state of nutrition of the synapse. If the synapse is deprived of normal nutriment it can and will not produce its usual level of resistance to the passage of an impulse but will resist in direct proportion to the state of nutrition. If the sewage disposal is impaired by a venous and lymphatic impediment then again the function of the synapse is impaired and its days work is reduced. If the synapse is given inadequate rest and is constantly bombed, frequently and over protracted periods of time it loses some and progressively more of its ability to screen out lesser impulses and they begin to leak thru the synapse in ever increasing numbers and will have reflex effect.

Many factors alter synaptic function. Habit formative and learning, are processes of association and repetition. Physiologic canalization of pathways resulting in a lowering of synaptic resistance due to the intentionally frequent passage of nerve impulses. Drugs of various forms lower synaptic resistance—strychnine being the classic example. Toxins accomplish the same end whether they are of endogenous, exogenous, chemical or bacterial origin. Possibly the mechanism of the effect of any factor operative at the synapse is an alteration in the H ion concentration. In all infections there is a toxemia, a lowering of synaptic resistance resulting. There is a tendency toward the acid side in all our tissues whenever we are intoxicated from any toxin, or when ever there is impedance to nerves and lymphatic return, with subsequent increase in the H ion concentration.

An increased H ion concentration means certain definite alterations in the physiologic function of nerve tissue. There is heightened irritability of the sensory terminals, lowering of synaptic resistance, heightened irritability of the nerve cells, radiation phenomenon or the stimulation thru associated pathways of a greater number of nerve cells, and increased reflex effect. There may be an intensified effect at the effector in an area of decreased alkalinity though the nerve impulse is of the same velocity and intensity.

The H ion concentration at the nerve cell and synapse due to the toxins in an infection, favor the reflex arc expression of the disease by producing pain and nyositis. The decreased alkalinity at those same areas due to Osteopathic spinal lesion pathology permits the same ease of radiation to other nervous with resultant reflex arc disturbance to tissues segmentally innervated.

—Byron E. Laycock, D. O.



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# THE LOG BOOK

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Volume 20

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NUMBER 2

## Death Claims Dr. Eades

Dr. Ernest Thomas Eades of Bluefield who has practiced Osteopathy in West Virginia since 1925 died suddenly from a heart attack January 7, 1942, on his way home from his office and was buried at Roanoke, Virginia, January 9th. Dr. Eades was graduated from the Des Moines Still College of Osteopathy in May 1925, wrote the examination given by the West Virginia Board of Osteopathy in June of that year, and immediately began practice at Williamson. In 1933 Dr. Eades moved his office to Bluefield when death claimed his brother, Dr. James B. Eades of that place.

Ernest was always a staunch supporter of the West Virginia Osteopathic Society and served as its president during the year 1931-32. On matters pertaining to his profession Dr. Eades was a convincing speaker at all State meetings. His ready smile, hearty hand shake, and genial personality will be missed by all who knew him. Our sincere sympathy is extended to his wife, Mrs. Mary E. Eades, in her great sorrow.

## Diagnostic Procedures

### Number V

#### Deficiency Anemias

Iron deficiency anemia is a very prevalent condition at all ages, from the infant, through the active adult years and in the aged. It is probably responsible for more malfunction of the human body than any other factor. When we consider that every symptom of anemia may be traced directly to oxygen starvation of the cells of the body, the full impact of its importance can be realized.

1—**Deficient intake of iron** is the first factor for consideration in the correction of such an anemia. If we eat a normal well-balanced diet consisting of meat, fruits, and vegetables, supplemented by dairy products the requirements will be met. However, if we by choice or necessity limit the selection of foods an anemia will creep into the picture. Anemia is no respecter of classes; it occurs just as frequently among those financially able to provide adequate food as among the under privileged and destitute. Dietary fads for reducing and for specific diseases should be continually kept in mind.

2—**Defective absorption of iron.** Most of the iron received by the body in food is in the ferric state.

## In Cooperation With the Defense Program

Des Moines Still College of Osteopathy announces a plan whereby the full four year course of professional training in osteopathy will be presented in three years, by doing away with summer vacations. The full semester's programs will be conducted as at present without any lessening in subject material and without any lowering of scholastic standards. New Freshmen classes will be enrolled at the beginning of each semester.

The next semester (summer semester) will begin on June 15, 1942 for registration, class work beginning on June 16, 1942. The fall semester will begin on October 19, 1942 and the spring semester will begin on March 9, 1943.

This speed up program is the result of the desire of the osteopathic officials and of the osteopathic colleges to cooperate with the National Defense Program and is contrived to enable our osteopathic educational institutions to make osteopathic physicians and surgeons more rapidly available, looking toward the health, safety and interest of the public.

This new program of condensation of the osteopathic professional course, has the approval of the American Association of Osteopathic Colleges, of the Bureau of Professional Education and Colleges of the American Osteopathic Association and of the Board of Trustees of the American Osteopathic Association as represented by their Executive Committee. The Selective Service System has clearly indicated its attitude regarding the great importance of the services of osteopathic physicians in this national emergency. They have expressed their opinion that it is desirable that osteopathic students shall be deferred for the completion of their professional training. They have made it evident that desirable and well qualified students shall be allowed to enroll in the osteopathic colleges in order that the supply of osteopathic physicians and surgeons shall be increased.

The Bureau of Professional Education and Colleges of the American Osteopathic Association has ruled that the present high standards for entrance qualifications shall be maintained. Two full years of collegiate work (60 semester hours) in an accredited college or university, without subject designation, will continue to be the entrance prerequisite for students enrolling in the June 15 class and for all subsequent classes until further notice. Des Moines Still College of Osteopathy, as one of the approved osteopathic colleges, will follow these established requirements.

Particular attention is directed to the fact that there will be a summer session and the enrollment of a new class beginning on June 15, 1942. The reason for especially directing your attention to this date is because of the fact that it is a distinct departure from our former schedule.

Supplements are being prepared for the new catalogs to incorporate the changes in the college calendar and other information.—A. D. B., D. O.

Before absorption can occur, the ferric iron must be changed to ferrous iron. This is accomplished by the stomach in the presence of hydrochloric acid of the gastric juice. If a condition of hypochlorhydria exists, the amount of iron converted to the ferrous state is greatly reduced. If the truth were only known we would probably find that far more individuals are suffering from **deficient** gastric acidity than from **excessive gastric acidity** as we are currently led to believe. Keep in mind that between 50 and 60 years of age, the potency of the digestive juices is reduced to the physiological needs of the body with very little left over for digesting food the body

does not need. In some cases it is advisable to determine whether the patient is holding the food in the stomach long enough to permit the conversion of iron. "Intestinal hurry" may rush food along the canal too rapidly and thus retard absorption of iron.

3—**Increased demands for iron** demand consideration. This factor is of little importance in men, except following acute or chronic hemorrhage. In women is of vital concern from the onset of puberty until the close of the menopause. The body is able to make up the blood loss during menstruation if not more than 400 cc. During pregnancy the mother requires an extra supply (Continued on Page Two)

## Embryology

### Physiology of the Fetal Circulatory System

Although the individual parts of the circulatory system accomplish a long and varied list of physiological tasks, the original and basic function of the system as a whole is the supply of oxygen and nutriment to the tissues and the removal of their metabolic products. It is a fluid system of communication between all parts of the body, whose complexity and perfection are directly proportional to the complexity of the body it is to serve. This correlation is substantiated by data of both comparative anatomy and embryology. Until the gastrular stage of development has been reached a circulatory system is unnecessary, and none is developed. Nutrition is obtained by osmotic processes, and circulation by diffusion is adequate. This type of nutrition is used by the human embryo for about two weeks. Later, fetal circulation is established to care for the needs of the growing embryo. Several aspects of these embryological acquisitions are reviewed below.

### Heart

The earliest cardiac contractions have been observed in the 3-somite stage of mammals and have been recorded by cinemicrographic methods. The initial heart beat consists merely of isolated, spasmodic contractions of a few bulboventricular cells. After a few hours the activity of right and left sides is coordinated, but the movement of the blood is of a tidal nature. Following ventricular contraction the atrium and sinus venosus begin to pulsate in that order. As each of these parts is included in the embryonic cardiac cycle there is an acceleration in the (Continued on Page Two)

## Engagements

The engagement and approaching marriage of their daughter, Geraldine, was recently announced by Mr. and Mrs. G. H. Greene of York, Nebraska, to Scott Heatherington, a freshman at Still College. The wedding will take place February 21, at the Methodist Church in York.

Another engagement of interest to Still College is that of Jean Stockdill, daughter of Mr. and Mrs. D. S. Stockdill of Winnebago, Minnesota, to Roy Bubeck, a sophomore at Still. The date of the wedding has not been set.

It is our desire to wish both of these couples the best of everything in the years to come.

## ΑΟΓ

On Monday evening, February 2, Calvaria Chapter installed its new officers for the current semester. They are as follows:

Cerebrum, Irving Ansfield; Cerebellum, Louis Radetsky; Pons, Arthur Abramsohn; Calamus Scriptorius, Daniel Feinstein; Neuroglia, Paul Green, and Calvarium, Norman Kurzer.

Congratulations to Dr. Edward Kanter on his receiving the Psi Sigma Alpha award for the highest scholastic average in the January class just graduated.

The fraternity is determined to make up in spirit for what we lack in numbers, and a fine educational program in Osteopathy is being planned for this semester.

We wish at this time to take the opportunity to welcome the new freshmen and to wish them success. They are to be congratulated on their choice of Osteopathy as a profession.

## ΦΣΓ

This last month at the fraternity house has been a comparatively quiet one, due to final exams and the new semester starting.

There are two new freshmen living in the house, Jack Yarham and Ellsworth Haynes, also Ray Sweeny is back with us this semester. The fraternity smokers are coming up soon and we hope to pledge these new men.

Two of our members, Glenn Munger and Jack Mills have graduated and left us. We all hated to see these men leave but hope they have much success in practice.

Ray Sweeny brought back some of his first aid equipment that he used as trainer of the Brooklyn Dodgers professional football team and is conducting an extra curricular, class in first aid for the fellows in the house. So far this has proven most interesting.

—H. C., Secy.

## ΨΣΑ

Psi Sigma Alpha begins the first semester of 1942 by extending its congratulations to both graduating seniors and new freshmen.

Our new officers have taken their posts with determination to make this a profitable and outstanding semester.

—P. T.

## ΔΩ

The Delta Omega Sorority has launched into an avalanche of activities following the return to Des Moines from the Xmas holiday excursions.

On Sunday, January 18, in Grace Ransom's Tearoom, Mrs. Aileen Kimberly and Mrs. Beatrice Laycock were welcomed into the chapter as honorary members. Following this, the new officers were installed, namely, Mildred Weygandt, president; Mary Toriello, vice president; Mary Williams, corresponding secretary; Emma MacAdams, treasurer, and Maxine Seabloom,

guard.

Rachel Payne, recording secretary-elect, was unable to attend the meeting for installation at this time. Dr. Rachel Woods acted as installing officer.

Following the business meeting a lovely buffet supper was enjoyed. Beside the active members of the chapter and the two honorary members, the following were present: Drs. Mary Golden, Rachel Woods, Beryl Freeman, Ruth Paul, Burnanette Connelly, Mrs. A. D. Becker, Mrs. L. L. Facto, Mrs. B. L. Cash.

January 15th, the Deltas were graciously entertained by the Iota Tau Sigma fraternity at their Senior Banquet. Thank you, boys. The corsages and all were appreciated.

Dr. Rachel Woods and Mrs. B. L. Cash entertained the Sorority at a sumptuous dinner in Mrs. Cash's home, February 4th. After dinner we enjoyed the movies of the Cash's vacation last summer, then we played Court Whist until time to go home.

Now all the girls are preparing to give the Bowling Tournament some real competition. WATCH TO YOUR LAURELS, BOYS!

—M. W.

## ΙΤΣ

The main event of the past month was the senior banquet at Boyces Uptown Cafe in honor of our graduating brother, Bill Ferguson. Bill is now located in Corydon, Iowa. Congratulations Bill. We wish you great success.

A delightful dinner was made more enjoyable by the gracious presence of our guests, the members of Delta Omega Sorority. We were happy to have Drs. Cash, Sloan and Kelsey with us for the evening.

Dr. Paul Kimberly was the speaker of the evening. His topic, Mind Over Matter, was very capably presented and was enjoyable as well as educational. We take this opportunity to thank Dr. Kimberly for his fine address.

The banquet was, indeed a most enjoyable event and one which we will not soon forget.

We are happy to announce that Carl Crow has affiliated himself with us as a pledge. We extend congratulations to Carl and are sure that he will be a credit to Iota Tau Sigma. We are also glad to see Major Anderson back with us this semester. He is planning his initiation in the near future.

The customary smoker, to be held Wednesday, February 18, is planned in the form of a dinner.

## Ο.Μ.Ο.Ο.

On January 20, the Osteopathic Women's College Club held a banquet in honor of the graduating senior's wives at Grace Ransom's Tea Room.

Mrs. A. D. Becker was toast-mistress and principal speaker.

Entertainment was provided by Mrs. Peace, Mrs. Ginn, and Mrs. Barnum.

Mrs. Brail was presented with an O. B. certificate.

—P. S.

## ATLAS CLUB

The Atlas semi-annual senior banquet was held January 15th, at Rich's Grill. The honors went to Donald Brail, Herman Gegner, and our past president, Merton Worster.

On Saturday, January 31st, at 3 o'clock in the afternoon, the fraternity attended the wedding of Mr. Gerald Dierdoff and Miss Fay Brooks, who were united in marriage at the West Des Moines Methodist Church. After the wedding ceremonies, a reception was held at the church for the guests.

The Golden Gloves boxing matches, which were held at the Shrine Auditorium Monday, February 2nd, were attended by Atlas "En masse." The fraternity had the honor of having as its guests for the evening the incoming freshmen.

—P. J. S.

## Senior Awards

The following graduates of the January '42 class have been awarded top honors in the following divisions:

General Clinic—Donald Wm. Brail.

Obstetrics—Glenn C. Munger and Wm. T. Ferguson.

Gynecology—Edward S. Kanter.

Proctology—Wm. T. Ferguson.

Anatomy—Edward S. Kanter, Alfred H. Thiemann, Wyatt A. Wood.

## Diagnostic Procedures

(Continued From Page One)  
of iron to meet the demands of the fetus as well as her own. During the last two months of pregnancy, the fetus must store enough iron to last for the first six months following birth when the diet is chiefly milk which is very low in iron. After the menopause there is very little difference in the incidence of anemia between men and women.

4—**Defective assimilation of iron** and use by the body in the building of the hemoglobin molecule in the red blood-cells by the bone-marrow completes the chain of events. As mentioned in Article Number IV, the bone-marrow is called upon to produce 1 trillion cells daily to replace those which have live out their life-span of 30 to 40 days. If the bone-marrow is not supplied with the necessary raw materials, the red cells will be turned out with deficient hemoglobin, giving a hypochromic normocytic anemia. If the raw materials including iron are too scarce, the number of red cells will be reduced and the size of the cells decreased, giving a hypochromic microcytic anemia. The bone-marrow is no different than any other organ of the body. It is one part of the correlated systems. Infectious diseases, organic disturbances of all kinds may suppress the bone-marrow and be the etiological factor in anemia, even though intake, absorption, increased demands and assimilation do not enter the pic-

ture. At this point we should not lose sight of the osteopathic concept in treatment. If the body is to function normally there must be "structural and functional integrity," and certainly the bone-marrow should not be neglected in this generalization.

It is pertinent to repeat in these diagnostic sketches, broken into monthly units, that a blood-count from the laboratory will be of much greater value if we take time to interpret it in the light of body function and then set about to correct the difficulty.

O. Edwin Owen, D. O.

## EMBRYOLOGY

(Continued From Page One)  
rate of contraction. Hence, even though the ventricle is the first part of the heart to contract, it is soon brought under control of the sinoatrial region which permanently retains its function as pacemaker of the heart.

In the first four lunar months of pregnancy fetal heart sounds are not audible, and therefore no data are available regarding the heart rate during this period. In the fifth month the mean rate in a long series of cases is 156; in the ninth month it is approximately 130. There is a marked, though unexplained reduction in rate during passage through the birth canal, and the rate immediately after birth the rate is approximately 112. It is postulated that during intrauterine life the fetal heart pulsates as rapidly as it can without modification by nervous control. The myocardium itself is capable of changing its rate as shown by the inhibitory action of muscarin, carbon dioxide and oxygen lack. These effects are supposedly due, however, to direct action on the pacemaker of the heart rather than by reference through nerves, whose cardiac connections have not been established at this time. The progressive postnatal slowing of the heart is correlated with the development of the vagal nerve supply.

Variation in the oxygen and carbon dioxide content of the maternal blood, per se, does not alter the rate of the fetal heart. However, ligation of the umbilical cord produces a marked bradycardia, due, presumably, to asphyxia of the pacemaker region of the fetal heart. Although physiological chemical changes in the blood of the mother do not directly affect the embryonic heart rate, nevertheless uterine contractions are known to produce fetal variations. Because of the inadequacy of cardiac innervation, thus precluding the operation of the Marey, Bainbridge or MacDowall reflexes, the manner in which the variations in fetal heart rate are produced is not understood.

It is interesting to note that attempts to make fetal electrocardiograms are on record, but these have not been successful. The electrocardiogram of the newborn infant, however, is similar.

(Continued on Page Four)

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Richard F. Snyder, B. S.

Advisor.....Arthur D. Becker

Osteopathy Without Limitation

## Special Program For Civilian Defense

Plans are being rapidly crystallized in Des Moines Still College of Osteopathy for training the entire membership of the student body and faculty members for service in emergency. This program of special training will begin February 21 and is a logical follow-through of the regular work done in the class of Military Medicine. It is planned to include all of the classes in the college from the beginning Freshmen to the upper Seniors. The training will incorporate the following subjects not only from the theoretical standpoint but from the demonstrated and practical standpoint.

The formation of squads and directions as to how squads should proceed.

Control of hemorrhage.

Emergency field dressings for various types of wounds.

Shock, how to prevent it and how to treat it.

Burns: Proper dressing and field emergency care.

Fractures: Proper splinting and protection so that the patient may be moved without additional trauma.

Bandaging: The applications of the cravat bandage, and other types of bandaging.

Instructions and practice in methods of handling injured persons, and care necessary in transportation to base hospital.

It is planned to have the actual materials present and available, in the way of splints, bandages, dressings and all necessary equipment to give the work greatest practical value.

Members of the surgical staff will cooperate in the instruction falling in their particular field. This work is being undertaken in cooperation with the Regional Civilian Defense activities and represents the desire on the part of Des Moines Still College of Osteopathy to make its best contribution in preparation for emergency treatment and care in the event of any catastrophe. The entire student body and faculty have expressed themselves as being not only willing but ambitious to undertake this special training.

—A. D. B., D. O.

## Address Changes

Every month we receive returned copies due to a change in address.

We would appreciate notice of any change in order that you may receive your copy of The Log Book without delay.

## STUDENT SELECTION

Dr. Arthur D. Becker, President of the college, attended the first Regional Conference on student recruiting and selection held in Chicago on February 1. This was an all day conference and a most enthralling and valuable one. Representatives of Divisional Societies were present from Michigan, Wisconsin, Minnesota, Ohio, Indiana, Kentucky, Illinois and Iowa. AOA officers from Chicago, Washington and St. Louis were also present, as were a number of AOA officials located in Chicago. Representatives from the Chicago College of Osteopathy, the Kirksville College of Osteopathy, and the Des Moines College of Osteopathy were also present, contributing to the days program.

This was the first vocational conference of a number which are planned to be held during the month of February to confer on the matter of student recruiting and student selection. The P. & P. W. Committee has undertaken and is underwriting this very important and directional activity. As a matter of patriotic duty and as a matter of active cooperation in a most important mechanism of the Defense Program, it is imperative that we have an increasing number of osteopathic physicians and surgeons made available for the health, safety and interest of civilian groups. It is just as important a part of efficiency and maintenance of defense activities that the national health be maintained as is the creation of a good army and navy personnel. We are all in this war together. The duty and privilege and opportunity of the osteopathic profession is to conserve the health of the people to this end. Every osteopathic physician has a definite and personal contribution to make in the giving of his or her personal attention in securing capable and qualified students for our osteopathic colleges. The colleges are well equipped and prepared to make such needed changes and adjustments as may be necessary to cooperate in the fullest possible extent with any defense measure initiated and maintained by our Government. Get behind the colleges in their efforts to serve.

—A. D. B., D. O.

## Pursuit for a Reason

It was far beyond the span of life of most of us, in 1874, when Dr. A. T. Still made his first official statements regarding immunity and the reaction to infection. In the 68 years since the inevitable progress of science has built a highway to the gates of the land that A. T. Still called "Osteopathy." From 1874 until just a few years ago Dr. Still and his recognition of what is now scientific fact had many Brutuses, many Judases, and Quislings. Through it all has rolled with increasing momentum the pure science of Osteopathy. At times it is evident that progress was bogged down from so many riding along, taking the golden eggs, giving no true effort to replenishing the blood bank from which they derived a daily transfusion. That procedure has come to an end again, as it has repeatedly in the past but this time it is evident that a state of siege is at hand. We can have no monopoly on pure science and it was never intended that we should. What happens to the land of Osteopathic reasoning and Osteopathic therapeutics depends more than ever upon what we do about it. Not just what we off handedly think in fleeting moments, but what we actually say, and write, and DO. We have taken it for granted too long that while we talked about the dosage of sulfapyridine, the injection of hemorrhoids, the enucleation of tonsils, the value of see-otomy and the dispensing of placebo, someone else was talking and doing something about Osteopathy, the science that makes it possible for all of us to practice and live. Those minor complexities of practice are a

part of Osteopathy. They constitute only the smaller fingers on the hand of therapy, whereas, osteopathic principles of therapy and osteopathic manipulation are the strongest — the thumb. If we carry osteopathy to its proper place in the healing world or let its principles be carried there by others, without us, what any one of us can say or do will weigh little compared with the reverberating rumble of enthusiasm that the present emergency demands.

These remarks may be disquieting and they are meant to be so. As Dr. Becker so often says, "This is the time for doing and it takes a lot of doing."

The treatment of lesion pathology is directly related to the generality given above. Have we asked ourselves when meditating on osteopathic treatment, "How many times in the last year have I spent five minutes on passive motion after specific articulation?" Our private answer would probably be far less time than what we would admit to others. This lack of time in spite of the fact that to neglect this type of articular and tissue treatment is evidence of a lack of concern for the pathology of the lesioned area and the effectiveness of our treatment. We will grossly relax the patient by heat, inhibitive pressure, and slow stretching of muscle. Then we usually make a thrust that is supposed to carry the upper or lower segment in the direction of the plane of motion; then so often—we stop and say "Come back Thursday." We stop before we have actually performed the treatment for which this preparatory work was done. We must relax the patient first or else our correction is impaired. We must make a specific articu-

lar thrust in possibly, 10% of lesions or motion will be resisted. But the most important part of the treatment comes only after relaxation of muscle and establishment of articular motion to an average range. In my opinion, the articulation through complete range several times by passive motion is the element in treatment for which we should strive.

The greatest factor in the facilitation of venous and lymphatic return is joint motion and the alternate increase and decrease of pressure within the belly of the muscle, produced first by stretching and relaxation of muscle and finally by voluntary contraction and relaxation. Passive motion has tissue effect. It increases the rate of venous and lymphatic return and therefore decongests the fluid highways and permits the establishment of an active hyperemia. Acceleration of the return flow of venous blood and lymph from the tissues removes the accumulated products of metabolism, normal and abnormal. These products of metabolism are the factors that create the H-ion concentration in the area above the normal levels. It maintains the acidotic edema that in itself embarrasses venous and lymphatic return, renders the nerves in the area hyper-irritable, produces capillary damage, favors fibrosis, maintains muscle contracture, feeds the constant bombardment of the associated segment of the cord and lateral chain ganglia with conservatively 30 times the normal number of afferent impulses which create great reflex arc disturbance. It is imperative that the products of perverted tissue chemistry be removed or that its effect upon the tissue involvement is relieved before we can hope to accomplish much through the efferent mechanism upon the original inflammation. Once we have succeeded, our manipulation will create an active hyperemia necessary to reduce the H-ion concentration to a normal level; to facilitate repair, to give normal trophic impulses, nutrition and the free flow of fluid to and through tissue. Only then will we have effective improvement in any area of inflammation.

The local acidosis lowered in an area of inflammation was termed by Dr. Still back in 1874 "a souring of the tissues" and he had no electro-potentiometer to help him. Today we call it an increased H-ion concentration, but it is the same "egg" and it has the same effect upon the colloidal tissues now that it did in 1874. Dr. Still emphasized that the tissues had to be drained of the sour fluid that congested and irritated them; sweetened by a normal blood supply before inflammation could be combated.

It is astounding to realize that the effective osteopathic treatment used today was envisioned by Dr. Still so many years ago. By 1982 we will probably learn enough to understand a few more of the directions he gave to us.

—Byron E. Laycock

## I. S. O. P. S.

## Civilian Defense

L. L. Facto, D. O., Des Moines, chairman of the Society's Council on Defense and Preparedness for Polk County, has been appointed a member of the Medical Advisory Council of the city of Des Moines and County of Polk Civilian Defense Council by the chairman of that body, Mayor Mark L. Conkling.

H. D. Wright, D. O., Hampton, trustee and chairman of the Society's Council on Defense and Preparedness for Franklin County, has been appointed a member of the Medical Advisory Council of the Franklin County Civilian Defense Council.

L. R. McNichols, D. O., Carroll, chairman of the Society's Council on Defense and Preparedness for Carroll County, has been named a member of the emergency service unit of the Carroll County Civilian Defense Council.

Home Guard — Iowa  
Civil Air Patrol

B. D. Elliott, D. O., Oskaloosa, trustee and chairman of the Society's Council on Defense and Preparedness for Mahaska County, has been named personnel medical officer of Squadron 14 in Iowa's Civil Air Patrol.

## Spring District Meetings

The spring District Circuit meetings will be held as follows:

District I—March 29, Cedar Rapids.  
District II—April 1, Atlantic.  
District III—April 3, Ottumwa.  
District IV—March 30, Hampton.  
District V—March 31, Sioux City.

District VI—April 2, Perry.

## Convention Exhibits

Since the last issue of The Log Book, the following companies have contracted for exhibit space at the Society convention on May 6 and 7, 1942:

The Surgical Supply Company, Omaha; C. B. Fleet Company, Lynchburg, Virginia; Iowa Catalin Company, Des Moines; The Ottawa General Hospital and Arthritis Sanatorium, Ottawa, Illinois; and Physicians and Hospitals Supply Company, Minneapolis.

## Radio Committee

L. A. Nowlin, D. O., member of the Radio Committee, representing the profession at station WHBF, Rock Island, reports that the officials of that station have agreed to carry the new "V" series public service programs prepared by the Division of Public and Professional Welfare of the American Osteopathic Association.

## Dr. Golden Honored

Mary E. Golden, D. O., vice president of the Iowa Society of Osteopathic Physicians and Surgeons, has been elected President of the Greater Des Moines Council of Camp Fire Girls.

## Applications for Membership

William T. Ferguson, Corydon.  
John C. Edgerton, Boone.  
—Dwight S. James, Sec.-Treas.

## EMBRYOLOGY

(Continued From Page Two)

lar in type to that of the adult with the exception that there is a preponderance of activity on the right side of the heart. This finding is correlated with the anatomical observation that, at birth, the right ventricle outweighs the left by about thirteen percent. The prominence of the left side of the heart, characteristic of the adult, is not attained until the second or third post-natal month.

## Blood Pressure

In humans, only umbilical arterial pressure is available for study. In the newborn this is approximately 75 mm. Hg; in a single reading of a premature infant taken during caesarean operation, the pressure was found to be 58 mm. Hg, indicating that the intrauterine value of this variable is not likely to be very different from that of the infant at normal birth. Following the first movements of respiration there is a rapid rise in arterial pressure, believed to be accounted for by sympathetic vasoconstriction and cardioacceleration. The afferent limb of the reflexes responsible for these effects is thought to have origin in the diaphragmatic and other inspiratory musculature. Such early postnatal cardioacceleration, even though transitory, would indicate that sympathetic innervation has reached the heart (or at least is functional) before the inhibitory parasympathetic fibers have established cardiac connection.

Venous pressure of late human fetuses is approximately 25 mm. Hg. Since both arterial and venous pressures vary with uterine contractions, uterine motility should not be overlooked as a factor in venous return of the fetus.

## Fetal Circulation

The circulation time has been estimated in human fetuses to be 30 seconds; after birth the time is approximately 60 seconds.

No blood volume data for human fetuses are recorded, but the average quantity immediately after birth is 156 cc. per kilogram body weight. By inference from findings in other mammals, it may be said that the amount of blood in the fetus shows very little increase during the last third of gestation. During this period about one fourth of the fetal blood is found in the placenta; at half-term, on the other hand, the blood is divided about evenly between placenta and fetus. This is explained, of course, by the fact that the fetus grows after midterm at a much faster rate than the placenta. It is interesting, in this regard, that the rate of flow of blood through the umbilical circuit in the last third of pregnancy is twice that at half-term; moreover, there is a virtually identical increase in rate of flow through the maternal side of the placenta. This finding points to the necessity of maintaining adequate uterine tone and circulation during the last months of pregnancy in order that the nutritional respira-

tory and excretory exchanges in the fetus may be accomplished.

## Course of the Fetal Blood

There are three main theories about the course of the fetal blood, and these differ chiefly with respect to (1) the degree of mixing which occurs in the heart between the inferior and superior caval streams, and (2) the degree to which the pulmonary circulation functions. The classical theory of Sabatier, which is substantiated by anatomical observation, cinemicrography and the injection of a colored paste into dead human embryos, states that the blood from the inferior vena cava is shunted by a valve from the right atrium to the left atrium. Blood from the superior vena cava, emptying into the right atrium, is believed to cross the inferior caval stream without mixing and enter the right ventricle directly. The blood leaving the right ventricle through the pulmonary trunk would be shunted into the aorta through the ductus arteriosus. Blood on the left side of the heart would leave by the aorta. This pathway provides for supply of the heart and upper half of the body with relatively well oxygenated blood, but it does not take into account the drainage from the pulmonary circuit.

By injection of a starch mass into both superior caval and umbilical veins and by subsequently counting the starch grains which were present in the right and left ventricles, Pohlman and Kellogg concluded that there was thorough mixing of the superior and inferior caval blood. If such be the case, the heart and upper portion of the body will receive blood which is no more highly oxygenated than that passing through the aorta and umbilical arteries. Suppose, however, that an appreciable return to the left heart occurred by way of the pulmonary veins. Now, if equal concentrations of starch grains are found in the right and left ventricles, it is obvious that mixing could not have occurred on the right side of the heart; for, if mixing had occurred, the starch on the left side, diluted with pulmonary blood, would be less concentrated.

Patten and Toulmin, by measuring the orifices of the vessels entering and leaving the heart, arrived at the conclusion that there was probably an appreciable pulmonary circulation. This conclusion is supported by the following, totally unrelated sources of evidence. (1) The Fe and Hb content of the apneic, prenatal lung is virtually identical with the Fe and Hb content of the breathing, postnatal lung; it is estimated that 5% of the fetal blood is present in the lungs before birth. (2) Radiographic records also indicate a large quantity of blood in the fetal lungs. (3) In a case of congenital stenosis of the pulmonary veins, the left ventricle develops only about half its normal capacity and muscular power.

In view of the evidence and opinions presented above, it would seem that the "modern" theory should include the follow-

ing provisions: (1) Mixing of the superior and inferior caval streams does occur in the right atrium; (2) more umbilical blood gets to the left atrium than to the right ventricle, by virtue of the shunting effect of the valve of the inferior vena cava which directs the blood through the foramen ovale; (3) pulmonary veins return approximately as much blood to the heart as the umbilical vein, at least in the late fetus; (4) if there is mixture of the caval streams, and if there is loss of oxygen in the pulmonary circuit, then the lower half of the body must receive less oxygenated blood than the heart and upper half of the body.

## Changes in Circulation At Birth

Obviously, the first major occurrence at birth is the cessation of the placental circulation. The umbilical arteries soon constrict, allowing no more blood to leave the fetus. About 50 cc. of blood drain from the placenta into the fetus in the first minute after birth, and approximately 100 cc. in the next 30 minutes.

As soon as the umbilical vessels are ligated, less blood will reach the heart, since the inferior vena cava cannot be presumed to expand immediately. The blood previously flowing through the umbilical arteries is possibly accommodated by opening up capillary networks of the newborn, in response to new muscular work of the infant, including the maintenance of tone.

As less blood enters the right atrium following the closure of the placental circuit its filling pressure declines. This causes a difference of pressure on the two sides of the heart, and consequently, a closure of the foramen ovale. A secondary force assisting in the closure of the foramen ovale results from an increased pressure on the left side of the heart. This is brought about in the following way. With inspiration a negative intrathoracic pressure is created, lowering peripheral resistance in the large pulmonary vessels; the right ventricular systolic pressure therefore decreases. The left ventricular pressure increases with increase in systemic vasomotor tone. With increased flow through the lungs, left intra-atrial pressure will increase, thus permanently closing the valve of the foramen ovale.

The ductus arteriosus now closes, but the manner in which this is accomplished in the human is not understood. Intimal pads are present in late fetal life, and occlusion is thought to occur by a process similar to that found in endarteritis obliterans. Patency is frequently observed at autopsy in infants, and persistence of this condition for several years is not rare. Such a condition predisposes to bacterial endocarditis and throws a greater load on the left ventricle, leading to cardiac decompensation. If the ductus remains patent over a period of days, or even weeks, after birth it would seem that a murmur betraying this fact should be heard. However, such is not the case.

—Hugh Clark



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# THE LOG BOOK

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NUMBER 3

## Laboratory Diagnosis

### Laboratory Aids in Disease of the Pancreas

This is the first in a series of papers designed to give the practitioner a concise index of the value of the laboratory in modern diagnostic procedure.

In general the major diseases of the pancreas may be listed in the order of their frequency as follows:

1. Diabetes mellitus.
2. Acute non-hemorrhagic pancreatitis.
3. Acute pancreatic necrosis.
4. Chronic pancreatitis.
5. Tumors of the pancreas resulting in hyper-insulinism or hypoglycemia.
6. Functional hypoglycemia.

We will in this first paper consider Diabetes Mellitus. It is estimated by Joslin that there are 500,000 diabetics in the United States. In a study of the recent mortality statistics diabetes ranks ninth as a cause of death in the registration area; considerable importance is attached to the fact that in the last four decades there has been a progressive increase in the life expectancy of the diabetic, especially past the age of forty.

Briefly the laboratory aids in the diagnosis and control of the diabetic may be divided into the following:

1. Qualitative and quantitative estimation of Glycosuria and Ketonuria.
2. Blood chemistry study, as blood sugar and blood lipids especially cholesterol.
3. Glucose tolerance.

From the laboratory stand-  
(Continued on Page Two)

## Dr. Becker's Activities

Dr. Arthur D. Becker, president of the College, attended the Ohio State-wide meeting of district chairmen and representatives held in Columbus, Ohio on March 8th. This meeting was held in furtherance of the national program initiated and sponsored by the American Osteopathic Association and the P. & P. W. committee having to do with student selection and vocational guidance. Dr. Becker reports a fine meeting. Before returning to Des Moines about April 1st, Dr. Becker will hold several conferences with alumni groups in Ohio, Michigan, Wisconsin and Minnesota, having to do with college affairs and developments.

He will speak before several organizations and hold interviews with prospective students for the new class which enrolls June 15th.

*The next class to be enrolled at*

## Des Moines Still College of Osteopathy

will start

ON JUNE 15th, 1942

Entrance qualification required is two full years of college credit from an accredited college or university without specification of subject matter.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

## War Emergency Measures In Osteopathic Education

All universities and colleges, especially those turning out physicians and surgeons and graduates in the other highly trained professions, have found themselves faced with the necessity of adopting some war emergency measures in order to serve better in the victory program and to help overcome shortages in graduates. The American Osteopathic Association has announced the following war emergency measures in osteopathic education, which are of interest to students contemplating the study of osteopathy:

Approved colleges of osteopathy and surgery have been granted permission by the American Osteopathic Association, their accrediting agency, to eliminate summer vacations for the duration of the war, in order to graduate students in three years of 12 months each instead of the standard four of nine months each, as a means of helping to alleviate the doctor shortage.

Each approved osteopathic college will continue to require two years of college work for entrance, and for matriculation in each of the colleges this preparatory work will remain the same as in 1941.

As stated in Higher Education and National Defense Bulletin No. 18, issued by the American Council on Education, osteopathy is included among the list of fields for which occupational deferment for individual students may be granted by Selective Service. Authority for the deferment of osteopathic students in individual cases is contained in official memoranda issued by the Selective Service System (1-19 and 1-217). The Selective Service Memoranda were issued following a report by the Office of Production Management that "it seems that the national interest would best be served by permitting osteopathic students to complete their training." The same memoranda listed osteopathic practitioners as among those deferable in individual cases as necessary men in civilian practice.

Students should enroll provisionally in osteopathic colleges when they start their preparatory college work, so that the osteopathic colleges of their choice may guide them to their best advantage in pre-osteopathic study and so that the intention of the students to study osteopathy may be a matter of record in the osteopathic college.

It has become obvious that there will be need and opportunity for more women doctors in civilian practice to replace men entering military service. Women and men are equally eligible for entrance to the approved osteopathic colleges, and some of the most successful osteopathic physicians and specialists now in practice are women.

## EMBRYOLOGY

### PHYSIOLOGY OF THE FETUS

#### Respiration

The process of respiration is customarily divided into three phases: external respiration, internal respiration and breathing. It is easily recognizable that the problems of fetal respiration are greatly modified from those of the adult. Indeed, the methods employed by the fetus for oxygenation of its blood more closely resemble those of an aquatic animal than those of the air-breathing human adult. Internal respiration in the fetus presumably parallels closely the corresponding processes of the adult, though the question of fetal respiratory enzymes has not been satisfactorily answered; external respiration of the fetus involves the exchange of gases between the maternal blood and fetal blood in the placenta; fetal breathing movements as might be expected, can be detected rather early in the life of the fetus. Each aspect of respiration in the fetus will now be briefly discussed.

#### Plasmotrophic Nutrition

Until three weeks after fertilization the problem of oxygenation and nutrition of the embryo is solved very simply by the direct transfer of metabolic materials to the embryo from uterine sinuses to the syncytial chorion of the embryo. This is accomplished solely by diffusion since circulation in the embryo is not yet established. This primitive mode of nutrition is designated cytotrophic or plasmotrophic.

Concomitant with the development of the embryonic circulation the chorion becomes differentiated so that the nutritive villi penetrate and ramify throughout the uterine mucosa. With the inception of the embryonic placenta and circulation hemotrophic nutrition is established, for there is an exchange from the mother's blood stream to the fetal, umbilical circuit for distribution. This method of nutrition continues, of course, until birth. For the moment, only the role of the placenta and the embryonic circulation will be considered.

#### Erythrocytes

Red blood corpuscles are first  
(Continued on Page Four)

## Birth

Dr. and Mrs. J. R. Forbes of Swea City announce the arrival of a son, March 5. Dr. Forbes is a Still College graduate and former editor of the Log Book.

ΣΣΦ

The newly elected president, Robert Bennington has the fraternity functioning as a unit once more. In a meeting held at Taylor Clinic new committees were appointed and the bowling league schedule drawn up. This semester Jack Lilly is in charge of banquets and entertainment; M. B. Landis, John Link and Cy Des Lauries make up the membership committee; Bill Ball and L. Gaudet are in charge of initiations; while Vice President Maurice Geraghty is the interfraternity council representative.

Besides sponsoring the bowling league this year, the Sigma Sigma Phi have one of the leading teams. The roster is made up by Bennington, Landis, Lilly, Geraghty, Link, Rundels and Wentling. Two of the men, Bennington and Wentling have rolled the high score of the year, a 198 single game.

The next meeting of the organization, a banquet will be held at the Tally Ho Club Wednesday, March 11th.

O. O. W.

ΨΣΑ

A banquet meeting of Psi Sigma Alpha was held February 18, 1942 at Younker's Cremona room.

Judge Powers was the speaker of the evening, giving a very entertaining talk.

We are happy to announce that at our next meeting, March 11, the initiation of the following members into the fraternity will take place, Jim Booth, Douglas Franz, Willo Dunbar.

—R. D.

ΦΣΓ

Since the last issue of the Log Book, there have been many changes in Delta chapter of Phi Sigma Gamma. Outstanding among these is the pledging of Gail Boyd and Jack Yarham of Des Moines and Ellsworth Haynes of Columbus, Ohio. New blood is always welcomed into the fraternity and we really got a transfusion on Sunday, March 1 when James Crane, William Crotty, Herbert Harris, Patrick Lombardi, Gustav Peterson, Richard Snyder, and Victor Zima received their second and third degrees. After the initiation, the chapter held an informal luncheon for the new brothers, actives and alumni at Red's Barbeque.

Under the able management of Henry Shade, the Phi Sig's bowling team is leading the Sigma Sigma Phi interfraternity bowling league with nine wins and no losses. Keep up the good work boys!

Unlike most fraternity house committees, ours has really gone to work with concentrated effort on getting the house in condition for spring starting from the outside with a new neon sign and putting a few new touches to the recreation room. Orchids also go to our secretary, Herb Clausing for his efforts to keep in contact with our alumni.

—H. G. H.

ΔΩ

At our regular noon meeting for the month of February Mary Klesner was elected to office of recording secretary.

Friday evening, February 27th, Mildred Weygandt entertained the actives and honorary members at her residence at which time the regular business meeting was conducted and followed by a social hour and lovely lunch. Mrs. Laycock extended an invitation to the sorority to spend a social evening at Avon Lake sometime in the near future. Mrs. Becker told the girls they were given a standing invitation to use her home for meetings whenever they wished. Needless to say, we shall accept both gracious offers.

Our president, M. Wegandt, installed Mary Klesner as recording secretary at this meeting.

—M. W.

ITS

On Wednesday evening, February 18, Iota Tau Sigma held its smoker for the new freshmen class in the form of a dinner at the Garden of Italy. Thirty-one men were in attendance. After a splendid dinner short talks were given by Drs. Cash, Fisher and Sloan; Bob Hatchitt and Bob Bennington. Dr. Marshall H. Soneson, interne at Des Moines General, was introduced by Dr. Cash. Dr. Soneson, a recent graduate of the Chicago College of Osteopathy gave an interesting account of the activities of Iota Tau Sigma in that institution.

Ellsworth Haynes, president of the new freshmen class, favored us with a very fine recitation.

All those present seemed to have had a most enjoyable evening.

We extend congratulations to William More, who recently pledged the fraternity.

ATLAS CLUB

The semi-annual Atlas smoker for the new freshmen was held on February 16 and we were glad to have many of the local alumni present. Since then the club has had the pleasure of placing pledge-pins on the following new men: Ken Blair, Carl Nagy, Stan Kwiatkowski, and Barton Nelson.

We were honored a short time ago by a surprise visit from one of our recent graduates, Dr. John P. Engeman, who returned to Des Moines for a few days vacation. Dr. Engeman at the present time is practicing in Mt. Pleasant, Michigan.

During the past few weeks it was quite a surprise to everyone to learn that Paul Senk has been married for almost two years and that his wife is now living here in Des Moines. We also extend our heartiest congratulations to Scott Heatherington upon his recent marriage. The club wishes both of these couples the best of everything in the future.

—G. E.

DESERT-ATIONS

It is a real pleasure to live at the cross-roads (Las Cruces). The past several weeks have brought visitors that have added to the joy of living if only for a few minutes. Dr. and Mrs. Schoolcraft of South Dakota, Dr. and Mrs. J. P. and Dr. Joe Schwartz, Drs. George Widney and Jon Hagy and Dr. R. W. Ritter. Also several friends who are not members of the profession have stopped, all of these seeking some respite from the extreme cold of points north. With flowers in the garden for the past month it is an added delight to parade these and wonder why so many folks suffer the discomforts of severe weather until the breaking point. We are expecting J. P. and his wife and Joe back any day now and Joe is supposed to lose twenty pounds.

I have a paper from Honolulu and it is interesting to note the text of it in addition to an important announcement. Dr. Max Bergau has been appointed a member of the Osteopathic Examining Board. The paper was dated January 3 but did not reach me until the middle of February.

The season soon starts that will bring you together for state meetings. With the great need for intensified attention to our student problem, I hope that each convention will have some excellent reports on the newer organization plans for cooperation with the A. O. A. The past four years have seen some sincere efforts along that line but with little in the way of results. Our coming Chicago convention should bring together our very best talent in this division of the work for we now have a crisis that must be met with action instead of words.

The family is now scattered. Morrie is probably on his way to Ireland and the two grandchildren with their parents have been sent deeper into the heart of Texas. Coca-cola is getting scarce and planes seem to be up and down the valley continuously. The war seems to be getting nearer. The office continues to help keep patients on their feet so perhaps we are doing our little bit also.

—H. V. H.

O.M.C.C.

The Osteopathic Women's College Club held a party for the husbands at the Atlas Club on March 6th. Games, dancing, and a hearty lunch were the order of the evening. Two of the newlyweds, Scott Heatherington and Gerald Dierdorff, provided the entertainment.

The committee of Nadine Taylor and Bernadine Geraghty are in line for hearty congratulations for the well planned and enjoyable evening.

—P. S.

Laboratory Diagnosis

(Continued From Page One)

point perhaps the first evidence of altered pancreatic function will be the appearance of reducing substances in the urine. With the use of the standardised Benedict technique, in the absence of such preservatives as chloroform, chloral, and formaldehyde the reducing substance may be considered to be glucose. Benedict's solution, however, is reduced in the presence of uric acid and moderate amounts of protien, as albumin, on prolonged boiling. The presence of any quantity of the alkaptonic acids, or the conjugated glycuronic acids, even on moderate heating, will yield a positive reaction.

In the presence of increased urine out-put, an elevation in the specific gravity, and the presence of reducing substance in the urine, that has been demonstrated to be glucose, careful study must be made to rule out the possibility of diabetes as records show that on the average only one out of six persons showing a definite glycosuria is proven to be a non-diabetic. A deficiency in carbohydrate metabolism results in an impairment of the normal fat metabolism and the appearance of substances in the urine that may be attributed to the incomplete oxidation of the fatty acids, these will include: acetone, acetoacetic (diacetic) acid and β-oxybutyric acid. All of these substances may be demonstrated by the proper procedure, acetone being the most frequently found. It should be remembered however that acetone and the other by products of faulty fat metabolism are also indication of carbohydrate deficiency and other allied conditions.

Blood Sugar

The same factors influence the choice of method for the evaluation of the blood sugar as did the methods for urinary sugar. The older methods did little to exclude the non-sugar reducing substances. The newer procedures utilizing a properly prepared protien-free filtrate, using the standard Folin method, are as nearly specific for the true amount of glucose as can be obtained. According to convention, the values are to be determined in the morning after a twelve hour fast, by this method the normal concentration should be between 70 and 100 mg. percent. In the case of diabetes the concentration should be elevated, however in the broader line cases the morning specimen may be in the normal range. The fact remains in the diabetic we are dealing with improper utilization of glucose by the individual; and the more rational approach would seem to be the determination of the glucose concentration one hour following a normal meal.

The Glucose Tolerance Test

The reliability of the glucose tolerance test has been questioned by many authors, however little doubt remains, that with careful evaluation, the test may be relied on. In principle the

# The Log Book

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DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Richard F. Snyder, B. S.

Advisor.....Arthur D. Becker

**Osteopathy Without Limitation**

test is designed to plot the ability of the patient to utilize and dispose of an accurately measured quantity of glucose. In the case of the normal individual the following facts will be obtained: (1) The fasting sugar level will be in the normal range. (2) The highest concentration will not exceed 170 mg percent. (3) The sugar level will return to normal in a period of two hours. In the case of the diabetic the results obtained will generally be quite distinctive: (1) The fasting level will generally be above the normal level. (2) The highest concentration will exceed 170 mg percent, and a definite glycosuria will be present. (3) The return to the original level may be delayed as long as four hours.

The college laboratory uses the Exton one hour, two dose test. The procedure is as follows:

100 grams of glucose are dissolved in 650 c.c. of water and allowed to cool, then flavored with lemon and divided into two equal portions,

1. Blood and urine samples are collected and the first dose of glucose is given.
2. Thirty minutes after the ingestion of the glucose blood and urine samples are again taken; and the second portion of the glucose administered.
3. Thirty minutes later a third blood and urine sample are taken.

The blood samples are then run by the standard Folin method, the results plotted, and judged by the above criteria.

## Blood Lipids

The blood cholesterol level may be taken as an index of fat metabolism of the body. The normal values for the cholesterol level are given as 130 to 190 mg. percent with an average of 150 mg percent. There is a direct correlation between the efficiency of carbohydrate utilization and the lipid content of the blood, with an increase in carbohydrate utilization we have a decrease in the lipid content, therefore the most valuable way to follow the effect of insulin administration is to follow the cholesterol level. While the cholesterol level of the blood remains at near normal level in the diabetic it is safe to assume that the fundamental disorder of metabolism is under control.

The college laboratory uses the Leiboff method of estimation, using whole blood. This method is reliable as it is simple, and the possibility of error through frequent dilution and transference is obviated.

—R. C. Rogers

## Pursuit for a Reason

Before considering the reflex arc in any detail it is highly important to think a bit about what we call Osteopathic lesion pathology. This lesion pathology is an integral part of the mechanism of reflex arc disturbance to a viscus and the result also of reflex arc expression.

The macroscopic and microscopic changes in the lesion area are those of either or both:

1. Joint sprain and soft tissue trauma or 2, Soft tissue strain and chemical myositis. There is nothing mysterious about the thing we call osteopathic lesion pathology. The lesion may be acute or chronic. It may be caused primarily by trauma or secondarily by altered mechanics or reflex arc disturbance. The chain of progressive changes that occurs in the lesion area is fairly much the same whether the lesion is primary or secondary. If the lesion is primary then the maximum effect of the trauma is first on the muscle, peri and intra-articular tissue and then the nerve tissue becomes involved proportionally. If the lesion is due to reflex arc expression or disturbance, the maximum effect is first on the nerve tissue, then the neuromuscular area in the blood vessels and the muscle tissue and then the other tissues. If the lesion is due to compensation mechanical factors the inflammatory changes develop to the same degree in each of the tissues in the vertebral area and the other areas, at the same time.

After the lesion pathology has been developing for 48 to 72 hours it is highly improbable that a cross section of the tissues would reveal whether the lesion was primary or secondary unless an area of direct trauma were cut into accidentally. Early then would be visible local areas of intense capillary hemorrhage and venous rupture that would be absent in a reflex or compensatory lesions. There the capillary damage would be distributed in gradations with no definite line of demarcation. Early in the traumatic lesion there is the element of sudden hemorrhage, rupture of cells, local intense capillary damage, jamming of articular surfaces, impingement of synovial membrane. Local trauma may cause a temporary paralysis of the muscle and during those hours there may therefore exist an hypermobility. The articulations, unguarded by the usual segmentally supervised protective muscle tonus become increasingly traumatized by this transient hypermobility. The early reflex effect of this traumatic hypermobility is great and a minority of lesions remain in this state and a few that fall between areas of hypomobility may remain compensatorily hypermobile but definitely traumatic never the less.

Usually however, with the above mentioned traumatic factors there is a concomitant mechanical stimulus to the muscle

tissue and it resultantly and immediately undergoes contractural spasm.

The traumatic rupture of the continuity of tissue, capillary damage, hemorrhage, etc., results in the liberation of Boyd's H substance, a Histamin. Vasodilation results. One of two things happen. Either the muscle tissues relaxes, the motion then possible facilitates V & L return, and the active hyperemia neutralizes and repairs the results of the trauma; or if the tissue damage is too great or if the muscle remains in spasm then the vasodilation only contributes to the engorgement in the muscle, nerve, and synovial tissues and acute inflammation results. The muscle spasticity in itself is a great factor in maintaining a state of V & L congestion of muscle joint motion and muscle contraction and relaxation constitute the most important elements in the facilitation of V & L return. From here on the pathology that develops is in no way dissimilar to that that results from another etiological factor except of course in those few areas of direct trauma.

In a reflex or compensatory lesion the neuritic factor is manifested first. The processes of the production of this neuritic factor in disease of a viscus or disturbance of the somatic-somatic reflex arc has been touched upon and will be taken up in more detail. The segmental hyperirritability, the lowered synaptic resistance, the canalization and summation mechanics are all a part of the lesion but the effect on tissue is the element under observation at present. There is the increased number of impulses flowing to the muscle maintaining its contraction and at the same time a continuous stream of impulses flowing along the grey rami and the post-ganglionic fibers to the blood vessels that supply the muscle. There is coincidentally then a stimulation to the muscle producing work and a stimulation to the blood vessels producing an ischemic factor of considerable importance. The prolonged ischemia and the tetanic contracture of the muscle has a dual effect. The absence of the relaxation phase disturbs greatly the reformation of glucose from lactic acid and the acidity thus produced is stored and is cellularly and chemically traumatic. It is a maintaining factor and an irritant predisposing to further physiologic discord and subsequent pathology. The contracture of muscle if unrelieved creates an obstacle on the V & L side and maintains the storage of the acid radicals that render the sensory nerve terminals hyperirritable and canalizes the somatic-somatic and somatic-visceral reflexes further. Here too, the chemical insult to the tissues due to fatigue toxins will cause a liberation of Boyds H substance and vasodilation will occur. If the muscle will relax and permit motion to facilitate return then the active hyperemia will usually repair. If however, the stimulation to the muscle is

maintained then the active hyperemia only contributes to the congestion produced by the failure to facilitate return.

From here on the pathology can not be differentiated from that due to other etiologic factors. The muscle contracture impedes V & L return and causes a continual increase in the concentration of the acid products of the metabolism normal and abnormal.

Muscle tissue has a lower pH than most other tissues and the H ion concentration becomes of pathological importance in several different ways, in the lesion area. First and most obvious is the storage of fluid. Colloidal tissue in a relative or actual acid medium imbibes fluid. Intra and extra-cellular edema results. This edema may be marked enough to be visible, very frequently can be palpated in the lesion area, it is always seen in section of experimental tissue in any area of inflammation. Acidotic edema produces 1. Cellular trauma, 2. Capillary damage, 3. Pressure or sensory terminals, 4. Hyper-irritability of sensory terminals, 5. Maintained muscle contracture, 6. Impaired mobility, 7. Increased pressure within the joint capsule, 8. Impairment to V & L return, 9. Alters metabolism and trophism, 10. Holds in solution metabolic products and forms a further increase in the H ion concentration.

Physiologists have established beyond question the existence of these and other points in the area of inflammation.

1. Acidophilic dye injected into lesion areas and into normal tissue stains the abnormal tissues in the segment of the lesion and does not stain normal tissue.

2. Section of the lesion tissue shows intra and extra-cellular edema. Nuclei are found shifted eccentrically and even the staining of sections is impaired. In nerve tissue Nissl's granules are greatly diminished or totally absent in many cells.

3. Potentiometric determination of the pH in lesioned muscle in animals and humans shows a shift from 7.3 to 7.0 frequently and in acute inflammations a lowered pH to the amount of .5 below normal averages is frequently encountered.

These factors demonstrate a vast change in the bio-chemistry and physiology in the lesion area.

—Byron E. Laycock

## Bowling News

The bowling skill of Dr. J. W. Woods has once more come to the front. Dr. Woods has the highest average in the bowling league after three weeks of close competition. The high five averages are: Woods 157; Nagy 150, Shade 150, Kwiatkowski 150, and Wentling 147.

The Phi Sigma Gamma team after a relapse in '41 are again at the top in league standing. The results to date are: PSG 9-0; Faculty 6-3; SSP 4-2; LOG 5-4; Atlas 5-4; OWCC 3-6; DO 2-4; ITS 1-8, and PSA 0-6.

## I. S. O. P. S.

## Civilian Defense

W. D. Andrews, D. O., Algona, chairman of the Society's Council on Defense and Preparedness for Kossuth County, has been named a member of the Medical Advisory Council of the Kossuth County Civilian Defense Council.

## Vocational Guidance

Mary E. Golden, D. O., vice president of the Iowa Society and Dwight S. James, secretary and attorney, attended a school of instruction on Vocational Guidance at Chicago, Illinois, on Sunday, February 1, 1942, conducted by the Division of Public and Professional Welfare of the American Osteopathic Association. Other divisional societies represented at the meeting were Minnesota, Wisconsin, Illinois, Michigan, Indiana, Ohio and Kentucky.

Following this meeting John Q. A. Mattern, D. O., chairman of the Vocational Guidance committee of this society, in co-operation with President Jordan, began the development of a state-wide vocational guidance program through the selection of County Chairmen, to represent the profession in each County, in student selection and guidance.

County Chairmen who have thus far accepted this responsibility are:

B. M. Hudson, Charles City, Floyd County; Kay Y. Yazarian, Traer, Tama County; G. I. Noe, Sheldon, O'Brien County; Theo. M. Tueckes, Davenport, Scott County; Paul E. Eggeston, Winterset, Madison County; C. N. Maughan, Leon, Decatur County; H. Lachmiller, Clarion, Wright County; H. H. Jennings, Mason City, Cerro Gordo County; E. W. McWilliams, Columbus Junction, Louisa County; Walter G. Nelson, Sidney, Fremont County; C. E. Worster, Laurens, Pocahontas County; J. C. Bishop, Rock Rapids, Lyon County; Sherman Opp, Creston, Union County; Sara Miller, Sigley, Osceola County; L. J. Swift, Monticello, Jones County; N. A. Cunningham, Marshalltown, Marshall County.

## District Meetings

Mary E. Golden, D. O., vice president of the society, will represent the state organization at the spring district meetings. She will, among other things, conduct a school of instruction on vocational guidance at each meeting.

Dr. Harold D. McClure, director of clinics and professor of neurology at the Kirkville College of Osteopathy and Surgery will also be on the program. He will lecture on "Diseases of the Central Nervous System" and "Diagnostic Points for Your Practice."

Second District Changes  
Convention Location

C. R. Ayers, D. O., president of the Second District Society of Osteopathic Physicians and Surgeons, reports the location of that district's convention has been changed to Council Bluffs. The meeting will be held at Hotel Chieftain in that city.

## Radio Committee

Leo Sturmer, D. O., a member

of the Radio Committee representing the osteopathic profession at station KFNF, Shenandoah, has completed arrangements with that station's officials to carry public service programs. The programs will be the new "Victory series" prepared by the Division of Public and Professional Welfare of the A. O. A., and will be heard over that station every other Sunday at 1:45 p. m. The next program will be Sunday, March 22.

## Dr. Benz Enters Navy

Fritz Benz, D. O., Quasqueton, enlisted as Chief Pharmacist Mate in the United States Naval Reserve, on Saturday, February 28, 1942.

Dr. Benz, who is thirty-seven years of age, is married and has three children. His family will remain in Quasqueton.

Dr. Benz has taken an active interest in civic affairs and served as Mayor of Quasqueton. He has also taken a deep interest in athletic activities in Buchanan County having served as President of the Wapsie Valley Baseball League and the Buchanan County League.

## Convention Exhibitors

Two additional companies have contracted for exhibit space at the Society's annual convention since publication of the last issue of the Log Book:

The Therapeutic Oscillator Corporation, West Des Moines, and L. C. Hunt Surgical Equipment Company, Des Moines.

## Applications For Membership

R. R. Lamb, Des Moines.

J. P. Hull, Newton.

—Dwight S. James, Sec.-Treas.

## Embryology

(Continued From Page One)

formed in yolk sac. The number at first is relatively small and the hemoglobin content is low. However, there is a rapid increase in number of corpuscles, in size of corpuscles and in hemoglobin present in each corpuscle. The greatest transformation toward increase in respiratory efficiency occurs during the time when the liver is functional as a hemopoietic organ. During the latter part of gestation the concentration of hemoglobin does not vary greatly. At birth in the human, the number of corpuscles is less than that of the adult, but, probably on account of splenic contraction, the count rises to six or seven millions per c. mm. within a half hour. It will be recalled that the size of the corpuscles is greater, and therefore the hemoglobin content per corpuscle and total hemoglobin will be greater than in the adult per unit volume. It is believed that the anti-pernicious anemia factor of Castle is in large measure responsible for the blood picture of fetuses. The substance is supposedly transmitted through the placenta to the fetus, as shown by injection experiments; and there is ordinarily a concentration of the factor in the fetal liver at birth.

## Gaseous Exchange

When the embryo reaches the

uterus the uterine mucosa is already intensely hyperemic. The maternal placenta develops well in advance of the fetal placenta in order to provide nutriment for the embryo during the first three weeks of gestation. As a result the blood in the uterine veins in early pregnancy is highly oxygenated, whereas, toward term most of the oxygen has been removed. Three important features govern the efficiency of placental oxygenation of fetal blood: (1) Direction of blood flow, (2) Rate of blood flow, and (3) adaptation of fetal hemoglobin.

If the blood in the fetal placenta flowed parallel to the maternal blood through the villi, it would come into equilibrium only with maternal venous blood. This would be adequate in the early stages of pregnancy, but would cause fetal asphyxia when the fetus became large. Consequently a neat vascular device has been employed by means of which the blood in the embryonic villi flows in a direction opposite to that of the maternal blood. Umbilical blood therefore comes into equilibrium with that in the uterine artery rather than the uterine vein.

The placenta reaches its maximum size while the fetus is still growing rapidly and some compensation must be made to supply the growing fetus more efficiently with essential materials, as well as to remove its waste products. This is done by increasing the rate of flow through both the maternal and fetal sides of the placenta; increase in rate of flow in both instances is great and approximately equal.

A third physiological device for assuring the fetus adequate oxygenation lies in the peculiarities of the fetal hemoglobin. It takes up oxygen far more readily at low partial pressures than does the adult hemoglobin, though it will not take up quite as much as the adult in an atmosphere of unlimited oxygen. This fact is of tremendous importance to the human fetus, when it is recalled that the oxygen capacity of maternal blood in late pregnancy is reduced by about 20 per cent, due primarily to a reduction in alkalinity. Moreover, gram for gram, fetal hemoglobin will take up less oxygen than that of the adult and this deficiency is little more than compensated for by the larger quantity of hemoglobin.

As the fetus approaches term, the hemoglobin gradually acquires adult qualities. The value of this change is easily seen for the following reasons: (1) during fetal life the oxygen tension is low in the maternal placenta, and the fetus must use it to best advantage; (2) the total areas of the placental villi is only about half that of the lungs at birth; and (3) at birth there is a sudden change to a higher partial pressure of oxygen. The chief disadvantage to the fetal avidity for oxygen at low partial pressures is that it is more difficult to give up oxygen to the growing tissues. However, because of the restricted intrauterine activity the prob-

lem does not become acute. It should be added that carbon dioxide is more easily released by fetal blood, just as oxygen is more easily taken up.

By actual measurement it has been shown that fetal blood shows a higher oxygen content during and just after contraction of the uterus. It is therefore important that tone be maintained in the uterus, particularly during the last stages of pregnancy. Also, the normal depletion of oxygen in the maternal circulation can in some measure be corrected by attention to the vascular supply of the uterus.

Asphyxia at birth is said to be due, not to an accumulation of carbon dioxide as was formerly believed, but to a decrease in carbon dioxide accompanied by a fatal decrease in oxygen. The oxygen content may be no greater than one volume percent, and as a result, pH may fall even to actual acid conditions.

## Respiratory Movements

The first movements of breathing that are discernible occur toward the end of the third month of pregnancy; they are convulsive, jerky movements simulating dyspneic breathing or gasping. These indicate that the muscles are capable of contracting and that their motor innervation has been established.

Smooth, rhythmic, shallow breathing has been observed during the sixth month of gestation and afterward. The change from dyspneic breathing to the rhythmic type indicates important nervous changes. Primarily the change is due to the development of the association center in the medulla and the establishment of the reticulospinal pathway, forming new neuron circuits which are controlled by the respiratory center. As the internuncial neurons multiply and become subject to cortical influence the breathing movements approach those of the neonatal infant.

In spite of the early anatomical competence of the breathing mechanism, the fetus is ordinarily apneic until birth. When the shallow, rhythmic movements are seen it is indicative of either a very high carbon dioxide content of the fetal blood (for the threshold of the fetal respiratory center to carbon dioxide is much higher than that of the adult) or a serious lack of oxygen. The latter is the more common cause. When the oxygen lack becomes acute dyspneic movements occur, and these may cause aspiration of the amniotic fluid, resulting in a drowning of the fetus in its own amniotic fluid. Such aspiration does not occur with the normal, shallow movements because no change is brought about in intrathoracic pressure. Occasionally fetal hiccupping has been observed. Presumably oxygen lack is responsible for this phenomenon, as it is for the "normal" breathing movements. (The reader is reminded that the data for this and other articles of the present series on fetal physiology are drawn from Windle's *Physiology of the Fetus*, Saunders, 1940).

—Hugh Clark, Ph. D.



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# THE LOG BOOK

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Volume 20

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NUMBER 4

## Laboratory Diagnosis

### Laboratory Aids in Diseases of The Pancreas

In the last issue of the Log Book laboratory aids in diagnosis and control of Diabetes mellitus were discussed, in this second article aids to diagnosis in the remainder of the major pathological conditions involving the pancreas will be discussed. Those processes in which laboratory methods may be of help either in diagnosis or control will include: Acute non-hemorrhagic pancreatitis.

Acute pancreatic necrosis.

Chronic pancreatitis.

Tumors of the pancreas.

Physiologically the pancreas is concerned with the digestion of carbohydrates, fats and proteins, through the action of the enzymes amylase, lipase and trypsin. The function of the gland may be estimated in two ways; first by investigation of the stage of digestion of any of the aforementioned sub-strates in the feces, or by a quantitative estimation of the enzymes in the duodenal contents or the body fluids.

According to Elman, the blood amylase percentage is of greatest value in differentiating acute abdominal symptomatology that may be of pancreatic origin. Involvement of the pancreas in an acute or sub-acute inflammations give rise to objective symptoms as upper diffuse abdominal pain, nausea, vomiting and some amounts of visible jaundice; so general are these symptoms that the process may be frequently confused with biliary colic, acute appendicitis, perforated ulcer, or coronary thrombosis.

In the laboratory differentiation of these conditions it may be safely said that an increase in blood amylase at the time of acute symptom is clear evidence (Continued on Page 3)

## Dr. Becker's Activities

Dr. Arthur D. Becker, President of the College, will attend the Texas Osteopathic Association convention to be held in Houston on April 30 to May 2 inclusive. Dr. Becker will have several appearances upon the program discussing cardiac diagnosis and osteopathic therapeutics pertaining particularly to some of the more common heart involvements. The great importance of heart disease makes this subject a most timely one, and Dr. Becker's wide experience in the diagnosis and treatment of these conditions will be capitalized to the advantage of the Texas Osteopathic profession. —R. F. S.

## Colorado Society

Dr. Lonnie L. Facto of the College Staff made a trip to Denver, Colorado, on March 14, where he lectured to the members of the Colorado Osteopathic Society at the meetings of the Mid-Winter Clinics held at the Rocky Mountain Hospital. He lectured on the following subjects: The diagnosis and treatment of common gynecologic conditions; the diagnosis and treatment of low back pain; anterior poliomyelitis; and the diagnosis and treatment of irregularities of the heart beat. He, also, gave a short talk at the Monday noon meeting of the Cortex Club, a radio broadcast, and a brief discussion of the Osteopathic Physician's place in National Defense.

He reports that the meetings were well attended and a great deal of interest shown.

## Pursuit for a Reason

We have reviewed the similarity and dis-similarity of the muscle pathology in the first 48 to 72 hours of the lesions existence. This variation in the predominance of the pathology is very evident when the etiologic factors are considered. A great number of factors are to be thought of necessarily:

1. Acute trauma. It is obvious that acute strain to soft tissue and sprain of articular tissue will produce acute local inflammation first. Blows against relaxed or contracted muscles destroy tissue and incites reparative acute inflammation.

2 Chronic trauma has an accumulative effect. The mild occupational and postural traumas that have only slight damaging effect in an hour—when repeated daily for several years can and does produce extensive diffuse trauma to tissue in the form of chronic joint sprain and chronic soft tissue strain. Tennis elbow, comptometer neuralgia, the fibial torsion of telephone repairmen, the flattened and painful feel of those who stand erectly or nearly so most of the day without the benefit of motion are good examples not to mention the arthritic kyphoses due to high heels.

3. Acute hypermobility. As has been mentioned occasionally there will exist during the first 24-48 hours of the existence of a lesion, an hypermobility that permits an unusual and traumatic range of motion. This has great local disturbance and intense reflex effect.

4. Chronic hypermobility and its constant low grade trauma and persistent reflex arc disturbance. (Continued on Page 3)

## Clinic Review Week

Owing to the change in schedules incident to the war program, it has been determined that the Post Graduate Review Week usually scheduled about the first of June, will not be presented this summer. The new class beginning on June 15 (which incidentally promises to be a good one) brings so many added problems that it has been considered unwise to attempt to add to the existing and contemplated load on our faculty group. The proximity of the annual convention of the American Osteopathic Association, both in time and location, is a further reason discontinuing the review week for this year.

It is our understanding that the program of the National AOA Convention to be held the week of July 12 in Chicago, will place particular emphasis on war time responsibilities and problems of the osteopathic profession incident to the war program. It is particularly important that a capacity attendance be secured for the Chicago National Convention and we respectfully suggest that all who would have attended our week of Post Graduate Week and Clinic shall so arrange their plans as to attend the Chicago meeting. Our information is that there is every indication that the National Convention meeting will be a very large one. The sale of exhibitors space threatens to break all records. It is in the interest of the entire osteopathic profession that we centralize our post graduate efforts in this the first summer of the war time program.

—A. D. B., D. O.

## Dr. Laycock Lectures

Dr. Byron E. Laycock, Professor in charge of the Department of Osteopathic Principles and Technic, will make two trips during the coming month to give talks and demonstrations on programs. He will appear at the Childrens Health Conference at Kansas City April 15 to 18 inclusive and at the Minnesota State convention on the first and second of May, in Minneapolis. These invitations to take part on the programs indicated are very complimentary because of the fact that Dr Laycock was a guest speaker a year ago on each of these scheduled meetings.

## Ohio State Board

The Ohio State Medical Board examination will be given this June 16-17-18 and 19.

## EMBRYOLOGY

### PHYSIOLOGY OF THE FETUS

#### Digestion and Metabolism

Like the breathing mechanism the digestive system is functional long before it has any apparent physiological purpose. As early as the fifth month the swallowing reflex is completed, for numerous experiments have demonstrated that amniotic fluid is swallowed. Swallowing of the fluid is stimulated by the injection of saccharine into the amniotic cavity. This phenomenon has been used to advantage clinically in reducing polyhydramnia, when it had proceeded to the point of causing maternal discomfort. As might be anticipated from previous reference to the excitatory effect of anoxia on respiratory movements, similar conditions likewise evoke the swallowing movements.

The presence of amniotic contents in the intestine as well as x-ray studies indicate that gastric motility has been established as early as the fourth or fifth month. Regurgitation into the amniotic cavity also has been described, presumably accompanying dyspneic respiration. Hunger contractions of the new-born infant are described as being more rapid and vigorous than those of the adult.

Peristalsis has been observed in human fetuses in the eleventh week, and it is believed to be of neurogenic origin. Intestinal movements continue during the last quarter of fetal life. In late pregnancy, not only peristalsis but also segmentation and pendular movements occur.

Absorption takes place primarily in the fetal stomach, and to a smaller extent, in the lower part of the small intestine. Material passes through the duodenum so rapidly that absorption cannot occur. Absorption is believed to serve the purpose of supplying fluid in the last third of gestation when the placenta and maternal circulation begin to lose efficiency, although the evidence for such a conclusion is inadequate.

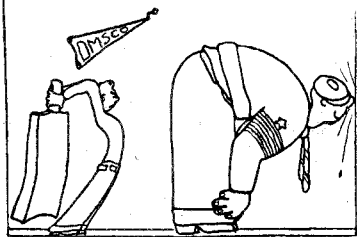
#### Defecation

During fetal life as early as the (Continued on Page Four)

## Birth

The many friends of Mr. and Mrs. Richard Rogers will be pleased to hear of the arrival of a daughter, Annette Jeanne, on March 31. Mr. Rogers is lecturing to the Red Cross training group in addition to his regular classes this semester.

## FRATERNITY NOTES



## ITS

Iota Tau Sigma feels that it was very fortunate in obtaining Mr. Robt. Blakely of the editorial staff of The Des Moines Tribune to address the faculty and student body at our assembly Friday, March 20. From the many favorable comments heard we believe his speech was well received by his audience. We hope we will be privileged to hear him again in the near future.

Several in the fraternity took the Iowa Basic Science examinations this month. Those taking the examinations were: Bob Hatchitt, Bert Adams, Larry Belden, Chas. Schultz, Jack Shaffer and John Halley.

Plans are being made to hold first degree initiation ceremonies in the very near future. Those being initiated are: Carl Crow, M. B. Landis, Loyola Gaudet, Wm. More, Wm. Blackler, Major Anderson, Ray Pinchak, and Bob Gustafson. We extend hearty congratulations to these men.

—E. M.

## O.W.C.C.

At the last meeting of the Osteopathic Women's College Club held at the East Des Moines Clinic April 7th, the officers for the coming semester were elected. They are: President, Dorothy Bone; vice president, Esther Zauder; secretary, Mary Jane Carhart; treasurer, Gertrude Mossman. It was decided that the husbands should be invited to attend the graduation banquet.

Mary Jane Carhart was the very capable chairman of the social meeting recently held at the Phi Sigma Gamma fraternity.

—P. H. S.]

## ATLAS CLUB

During the past few weeks the fraternity was very happy to welcome a few of the men from the field, who came to spend a few days in Des Moines.

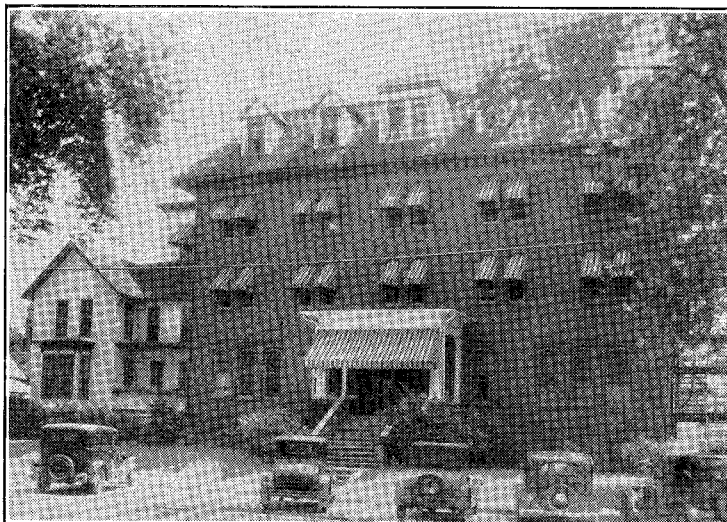
Dr. Robert Rheinfrank (May '41) gave us an unexpected visit, Saturday, April 4. Dr. Rheinfrank is a second-class pharmacist's mate in the Navy, and is stationed at Great Lakes, Illinois.

Dr. Merton Worster came to Des Moines to spend the Easter vacation. At the present time Dr. Worster is interning at Huttisford Hospital and Clinic, at Huttisford, Wisconsin.

Dr. Jerome Robb came to Des Moines last week and spend a few days at the club. Dr. Robb came to Des Moines to take the Iowa basic science examinations, which were given April 14.

—P. J. S.

## DES MOINES GENERAL HOSPITAL



## ΨΣΑ

There have been two meetings in the past month. One regular business meeting held at the Phi Sigma Gamma house and a banquet meeting held at Younker's Cremona room.

At our regular meeting Douglas Frantz, Willo Dunbar and James Booth received their initiation and are now members of the organization. R. C. Rogers gave an interesting talk on "Neurosis and Neurosthenia."

Dr. Park was the speaker at our banquet meeting. His talk dealt with problems that would confront us in practice. Much valuable information was received from Dr. Park's talk.

—R. A.

## AOF

With the first signs of approaching spring, plans for the annual senior outing are taking form. It will probably be held again this year at the Ledges State Park.

Congratulations to Frater Feinstein on his recent marriage—also to Frater Ansfield on his award of the Dr. L. Williams key.

We are sure everyone joins with us in extending our sincere sympathy to Frater Lou Radetsky on the sudden loss of his mother.

The best of luck to all the seniors in their qualifying exams.

—I. A.

## ΔΩ

March was a quiet month for the Deltas. Can it be that we had to take time out to catch a breath?

But don't get the idea that we didn't do anything interesting—we did. On a Saturday night last month the girls of Still College all piled into cars and drove out to Avon Lake—there to be royally entertained by the Laycock's. Everyone forgot anything like a diet when supper was served, then we spent a lazy, peaceful evening playing records, playing cards and—but oh, no, we never "just talk."

Oh yes! Have you heard?—

We're still going strong in the Bowling League. Come on boys, we'll need your moral support when we play the faculty—do we have it?

—M. W.

## ΦΣΓ

Members of Phi Sigma Gamma are back to work again after the Easter vacation. It is always nice to get home for a few days but everybody was anxious to get back to school.

The main social activity of this month was a inter-fraternity stag held at the Phi Sig house. Members of each fraternity of the school were present and a rip roaring good time was had by all.

Gus Peterson and Pat Lombardi both joined the armed forces of the United States. We hated to see these two men leave but wish them all the luck in the world and hope that they will be back with us soon.

Several members of the fraternity took the basic science exam April 14th. From the amount of extra studying that has been going on I would say that all should come through with flying colors.

Due to the war situation everybody is anxious to do his part to help. We feel that we will be of more use by staying in school, finishing our course and thus be better qualified to help in this war. The members of Phi Sigma Gamma are taking their work more conscientiously in trying to become better physicians. A great percentage of the members are taking a first aid course and some even two. Also social activities have more or less been pushed into the background.

—H. C., Secy.

## Address Changes

Every month we receive returned copies due to a change in address.

We would appreciate notice of any change in order that you may receive your copy of The Log Book without delay.

## DESERT-ATIONS

During the past two or three months I have received so many letters relative to locations in the South that it seems fitting this month to not only answer these again but also any who may contemplate a move to a warmer climate. Cold weather has been the major complaint but health has been mentioned also and should be kept in mind. When I was teaching, this subject came up frequently and I usually had a list of questions handy to ask and out of them you can glean the answer in the majority of cases.

- (1) Have you investigated the financial stability of the region where you wish to go?
- (2) Have you investigated the tone of the community, the typical native of the region and the percentage of people with whom you wish to mingle?
- (3) What about school facilities and if a small community the nearness of a city where articles other than the staples may be secured?
- (4) Do you expect to make this your permanent home or is it just a stepping stone?
- (5) If you have a family does this move meet with their complete approval? (It may be a long way from mama)
- (6) Can you afford to lose what it will cost to make the move?
- (7) If you are moving on account of health what percentage of sickness do you expect to find in the new place and what can you do that is not being done in this community?

There are a number of other questions that apply to the individual and these should be gone over carefully before anything definite is done. With the few, comparatively, who are practicing osteopathy (less than ten thousand) there is an opportunity almost anywhere but you will not be a success unless you want to actually live in the place that you go to. You will have to like everything about it. I can give you 100 reasons why I like this part of the country. You might laugh at 90 of them and call me crazy. (There is a bare chance that you would be right.) The point is this—no two people can agree exactly on the Sacro-iliac lesion and according to a well known mathematical adage no two people would agree exactly on a place to live and practice and raise a family. You will have to look around, get all of the information you can on the several places you think you would like, cut them down to two or three and then shut your eyes and grab one and keep it. Better still, take a trip to these two or three places and see them for yourself through your own eyes and make it more than an hour's inspection. Las Cruces is not perfect but it is very near it.

—H. V. H.

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Richard F. Snyder, B. S.

Advisor.....Arthur D. Becker

Osteopathy Without Limitation

## Still College Dramatic Club

A few weeks ago a group of Still students formed the Still College Dramatic Club, the purpose of which is to provide entertainment and fun for the student body. They introduced themselves to the college by putting on an assembly program in the form of a variety show. Vern Stoner acted as master of ceremonies. Musical numbers were by the quartet—(Gerald Rosenthal, Gerald Dierdorf, Scott Heatherington, Bob More)—the "New Yorker," Jerry Zauder; the "Old Timer," Scott Heatherington.

Dick McGill officiated at the piano. The other entertainers were Herb Harris and Bill Crotty.

Because time did not permit for the personal appearance of all the club members, the M. C. introduced the others:

R. C. Rogers, Mildred Weygandt, Mary Torriello, E. MacAdams, Mary Williams, Douglas Frantz and Carl Waterbury.

The Dramatic Club is preparing to put on an evening's entertainment in the near future, a full-length play that promises to be loads of fun.

Will keep you informed—and—oh, yes, we'll need your help—we will appreciate your cooperation. —M. W.

## Laboratory Diagnosis

(Continued From Page One)

of pancreatic involvement, whereas the absence of such increase, or a decrease in the blood amylase will point to an extra pancreatic lesion. In following the progress of the attack with subsistence of the acute symptom, the amylase content decreases rapidly.

The mechanism responsible for the increased blood amylase may be explained by the passage of the enzyme into the lymph due to a mechanical obstruction of the pancreatic duct by the attendant edema of acute inflammation, or by increased liberation of the enzyme by the parenchymatous cells of the gland involved in degenerative changes.

An increase in the blood amylase will bring about a corresponding increase in the amounts of the enzyme excreted in the urine. The College laboratory utilizes the procedure of Wohlgemuth for determination of the urinary amylase. Briefly the principle of the test is to establish the minimal quantity of urine capable of transforming 5 cc of a 1% starch solution into

products which no longer yield a blue color with iodine as an indicator. The normal values obtained by this procedure expressed as units will vary from 3 to 32, in cases of pancreatic involvement the units will be found to be as high as 200.

The changes in the concentration of blood lipase will parallel to some extent those of the blood amylase. The majority of authors claim no lipase may be demonstrated in the blood serum in the normal patient. Perhaps the most important application of the estimation of blood lipase is its value in differentiating inflammatory lesions of the biliary tract, generally there is no elevation of the lipase content in biliary disease, whereas inflammation of the pancreas will yield relatively high values.

In chronic pancreatitis estimation of the quantity of the enzymes in duodenal contents or in the feces is of greatest value. There is a profound decrease in the elaboration of the enzymes to a point where these estimation in the blood or urine is of little value. On analysis of the feces this fact can be brought to light. However, because of the small quantity of the enzyme which may be present, analysis of the stool for fat and nitrogen under a carefully regulated intake of fat and protein will be of more value.

The next article in this series will deal with tumors of the pancreas. —R. C. Rogers

## Pursuit for a Reason

(Continued From Page One)

ance is produced in a number of ways.

a. Anatomical hypermobility is due to abnormal development of articular surfaces. A thoracic type facet not infrequently occurs at the lumbosacral articulation. This will permit a motion on one side that is restricted by a lumbar facet on the other. A motion physiologic on one side may be traumatic on the other. Thoracic facets may appear in the middle of the lumbar area or lumbar facets may appear in the thoracic or cervical area. They are usually unilateral and therefore introduce definite mechanical problems of traumatic hypermobility.

b. Paralytic hypermobility. Muscle paralysis due to general disease or local neuritic factors that destroy most of the nerve cells leading to muscle, and the atonicity of muscle in anemias and parasympathicotonics permits to exist over a long time mobility in a joint that is unprotected by muscle tonus.

c. Lesion hypermobility due to the damaging effect of lesion pathology upon the nerve tissue and neuromuscular mechanism will permit a condition similar to paralytic hypermobility to exist that is similarly severely traumatic locally and productive of marked reflex arc disturbance.

d. Compensatory Hypermobility. When lesion pathology prohibits a free range of motion in one articulation then all or most of the motion in the area must

be assumed by the other articulations of that vertebra and by the ones immediately above and below. As long as they hypomobility exists then the resultant hypermobility in the other articulations will continue to compensate by assuming a greater mechanical force and more extensive motion. The abnormal motion is of course definitely traumatic. Frequently the effect of this trauma is secondary lesion pathology with contractural myositis appearing in the previously hypermobile articular areas.

e. Projection or concentration hypermobility is similar to the lesion or local hypermobility except that it falls between areas of general hypomobility and therefore assumes as much motion as possible that should be spread over an area of a half dozen segments. We see this force projected to the ends and the center of curvatures and to the points of greatest convexity and juncture of not only lateral curvatures but the gross increases in our so called physiologic curves. There does not have to be lesion pathology above or below this projection area where forces are concentrated. Frequently in elderly folks the generalized decrease in range of joint mobility will create one or more areas of hypermobility. This may be quite troublesome in that the reflex arc disturbance is great and yet as is usual in hypermobility, areas above and below or on the opposite side must be treated more than the immediate area itself.

f. Occupational hypermobility as the name implies is due to certain acts or positions assumed in the days work that throw a greater amount of force and motion into a local area than it is physiologically capable of assuming. The margin is narrow between chronic occupational trauma within the normal anatomical motion ranges and occupational hypermobility that is chronically and intermittently acutely traumatic with the range of motion being beyond the average range for the person, area and age.

g. Postural hypermobility is similar to occupational trauma in hypermobile areas except that occupational hypermobility is present only while the patient is working. Postural hypermobility acts on the patient whether he is working or not.

The importance of hypermobility in lesion areas or around lesion areas is that the excessive motion is traumatic to not only the area of hypermobility but also exerts a disturbing effect upon the lesion area itself. Also the excessive motion factor is traumatic enough that secondary lesion pathology usually develops and the reflex arc effect is great. Thirdly the fact that pain is frequently more acute in an area of hypermobility than in the area of lesion pathology with restriction of motion on the other side is a potent source of error in the diagnosis of the location of a lesion. Corrective forces thrown into the hypermobile areas are further traumatic and do not tend to terminate the inflamma-

tory process nor to decrease the great reflex arc disturbance to any tissue, somatic or visceral, that may be segmentally related to either the lesion area or the area of hypermobility or both.

The cause for the hypermobility must be determined or it will tend to remain, another source for untreatability in patients.

5. Reflex lesions are secondary and caused by any initiation to any number of afferent fibers that is greater than normal. Pathways are possible for almost any effect to occur but fortunately the reflex arc disturbance is usually a matter of segmental response or disturbance in some tissue innervated by the same nucleus and less frequently in more distant parts of the nervous system. Occasionally however, these associational pathways are canalized and then symptoms are produced that would otherwise seem inexplicable.

6. Compensatory lesions are those that are induced secondarily due to some mechanical defect or lesion above or below that throws a force into the area that puts it to a mechanical disadvantage or requires an abnormal position to maintain equilibrium or symmetry of motion.

It is probably that only 2 to 10% of lesions are primary in etiology and that all the rest and even many of those few that are purely primary to begin with have added to them some of these factors and are therefore of such a nature that we have to ferret out the maintaining factor and the etiological element before we can make any valuable interpretation of where the lesion is, what caused it, its reason for being present, its reason for remaining, many times in spite of all the "rolling of the bones." Osteopathic treatment therefore is not synonymous with manipulative treatment. In these days when the manipulative aspects of osteopathy are spreading to all schools of therapy it is important that the osteopathic reasoning behind the manipulating hand not be permitted to wander and only therein lies the future.

—Byron E. Laycock

## Convention

"Travel exclusively for pleasure, and the nation's insatiable desire for conventions of all types, must be curbed..." Some are quoting this and assuming that it means a small attendance at the A. O. A. convention in Chicago this summer.

But analyze the words. Going to an osteopathic convention is not "travel exclusively for pleasure." A convention having to do with the public health, and with scientific healing methods, does not come within an "insatiable desire for conventions of all types..."

What do the exhibitors believe about it? Already more of them have signed up than at the corresponding period in any previous year. They will be in Chicago, because they know you are coming for the good program being arranged.

## I. S. O. P. S.

**Forty-Fourth Annual Convention**

The Iowa Society of Osteopathic Physicians and Surgeons will hold its Forty-Fourth Annual Convention at Hotel Savery, Des Moines, on May 6 and 7.

Doctor Mary E. Golden, vice president and convention program chairman, reports that the following program is scheduled:

Ralph L. Lindberg, D. O., Chicago, Illinois, "Management of Edema"; and "Management of Hypertension".

J. S. Denslow, D. O., Kirksville, Missouri, "Electromyographic Studies of the Osteopathic Lesion"; and "Basic Principles in Manipulative Therapy".

L. W. Jamieson, D. O., Sioux City, "Osteopathic Surgery."

H. R. Schickley, D. O., Lincoln, Nebraska, "Osteopathic Technique Involving the Shoulder Girdle and Adjacent Lesions;" and "Osteopathic Technique Involving the Pelvic Girdle and Adjacent Lesions".

Robert Bachman, D. O., Des Moines, "Pelvic Infections".

R. C. McCaughan, D. O., Chicago, Illinois, executive secretary of the American Osteopathic Association, "Our National Business".

Holcomb Jordan, D. O., Davenport, president of the Iowa Society, "State Affairs".

Lonnie Facto, D. O., Des Moines, a member of the Medical Advisory Council of the Polk County Civilian Defense Council; E. F. Leininger, D. O., Des Moines, a member of the Hospital Advisory Council of the Polk County Civilian Defense Council; Charles N. Stryker, D. O., Sheldon, Captain of Company B of the Iowa State Guard and medical examiner for that company; and S. H. Klein, D. O., Des Moines, chairman of the Society's Council on Defense and Preparedness will conduct a panel discussion pertaining to civilian defense, state guard, and the profession's status in the national defense program.

"Bob" Burlingame, WHO's popular radio commentator, will be the guest speaker at the convention banquet, his subject being "America and the World Conflict".

**Convention Exhibits**

The following companies have contracted for exhibit space at the coming convention, since publication of the last issue of the Log Book:

Anabolic Food Products, Inc., Glendale, California; Vitaminerals Company, Los Angeles, California; Professional Foods, Cedar Rapids, Iowa; Mineral Research, Inc., Des Moines, Iowa; V-M Nutri-Food Company, Wilmette, Illinois; Bleything Laboratories, Des Moines, Iowa; and Endocrine Food Company, Union City, New Jersey.

**Applications for Membership**

Martha B. Morrison, Shenandoah.

—Dwight S. James, Sec.-Treas.

**Embryology**

(Continued From Page One)

fourth month the intestines are found to contain a composite substance called meconium. It consists of desquamated epithelium, fluid and various secretion products, particularly bile pigment after the fifth month. This material is naturally accumulated by the fetus, partly because of swallowing amniotic contents, and is passed at birth or soon thereafter. Defecation in amnio may occur, however, much earlier than this; it has been seen in cases of hysterectomy under local anesthesia at four months gestation. It is thought that it is brought about, along with general visceromotor activity, due to a decreased pH attendant upon increased carbon dioxide tension. Oxygen starvation may also initiate the activity, and frequently during prolonged labor or asphyxia neonatorum, the amniotic fluid will contain meconium.

**Digestive Glands and Enzymes**

The presence of virtually all the enzymes—from the salivary glands, intestine and pancreas—has been established by the fifth month or before. Likewise, during the fifth month, bilirubin is produced by the liver, and bilirubin is apparent in meconium a month later. The mechanism of escape of bilirubin to produce the hyperbilirubinemia of icterus neonatorum is not clear. The large size of the fetal liver speaks several important prenatal roles; these are associated with hemopoiesis, bile formation and several phases of metabolism.

**Fetal Nutrition**

In the human two methods of nutrition necessarily exist—the first, a histotrophic type, before placentation occurs; and a second, hemotrophic, after the intimate association between embryo and mother. Nutrition may therefore be classified as follows:

**A. Embryotrophe****1. Histotrophe**

a. Transient endometrial detritus, etc., for the implanting blastocyst.

**2. Hemotrophe**

a. Diffusible substances requiring no resynthesis.  
(1) Cases, dextrose and inorganic compounds.

b. Large nitrogenous molecules, diffusible but requiring resynthesis.

c. Substances such as lipids, truly absorbed by trophoblast.

**Placental Permeability**

This important subject has been given a great deal of attention, but data are still inconclusive in many details because of the extremely variable structure and perfection of placentae which exist in different species of animals. Not only is the mode of attachment to the uterus different, but also the actual structure differs from the extreme of epithelio-chorial through syndesmochorial, endotheliochorial and hemo-

chorial (human) to hemoendothelial.

The basic principle of placental activity seems to be ultrafiltration by means of which the size of the molecule is inversely related to its diffusibility. Absorption of lipids, however, indicates that the placenta itself plays an active role in transmission of food substances. It is not unlikely that the same principles of permeability and impermeability apply to the placenta as to other protoplasmic membranes, having peculiarities which are not yet understood due to both lack and apparent conflict of experimental data.

**Metabolism of Carbohydrates**

The chief source of fetal energy is the dextrose derived from the maternal circulation. It passes readily across the placental barrier and in the human is found in concentration of 115 mg. per cent in the fetus near term, being slightly lower than that of the mother (132 mg. per cent).

Both placenta and liver are important carbohydrate depots, and Claude Bernard in 1858 referred to the placenta as a "transitory liver" for the embryo. Glycogen is found here before it appears in the fetal liver, but it is confined to the maternal placenta. Glycogen storage is gradually taken over by the fetal liver in the last quarter of pregnancy: the assumption of glycolytic function appears to be coincident with, or slightly previous to, the development of the islets of Langerhans. The glycogen content of the fetal liver rises toward term although the amount varies with the diet of the mother. Fetal glycogen is used but sparingly as long as maternal dextrose is available, but is readily given up in a carbohydrate emergency.

The placental barrier seems to be impervious to insulin, although paradoxically diabetic mothers are known to be protected by the fetus during pregnancy. This is probably due to the utilization of dextrose by the fetus, removing the excess from the maternal bloodstream. Immediately following parturition, glycosuria occurs in the mother.

**Metabolism of Lipids**

Well nourished fetuses have good supplies of fat, and the question arises whether it is transferred directly or whether it is synthesized by the fetus from simpler compounds. From evidence available, the fetus appears to synthesize fat, for (1) fat stained with Sudan III is deposited in the stained form in maternal tissues, but in the fetus it is colorless; (2) regardless of the degree of saturation of the fat in the maternal diet, fetal fat is inevitably saturated; (3) fetal fat contains more palmitic and less oleic and stearic acids than that in the maternal diet, and (4) the lipid content of fetal plasma is 948 mg. percent, and that of the adult is but 737 mg. per cent, although the erythrocyte content in both is approximately the same.

Near term the fetus may take

up about 50 grams of lipids, of which 40 grams are phospholipids. The remaining 10 grams consists of free and neutral fats, the latter passing apparently in either direction through the placenta.

**Protein Metabolism**

Three methods exist for determination of facts regarding fetal protein metabolism: (1) comparison of chemical composition of maternal and fetal blood, (2) analysis of nitrogenous waste products of the fetus, and (3) study of the structure of the embryo itself at different stages. These methods suggest (1) that amino acids freely pass the placental membranes, but may reach a higher concentration in fetal than maternal blood; (2) that urea, ammonia, uric acid and creatinine pass directly from fetus to mother by purely physical processes; and (3) the fetus grows very largely by means of nitrogenous substances early in life. The nitrogen content of the tissues remains quite constant after the first third of gestation, when the fetus attains "chemical maturity."

No variation in amide, human and cystine nitrogen was observed throughout development, but amino nitrogen increased whereas nonamino nitrogen decreased throughout development. In the early stages lysine and glutathione increase, but then gradually decline. Arginine, histidine and tyrosine decrease progressively from the beginning of development.

One of the most interesting features of nitrogenous excretion is the elimination chiefly of urea and ammonia by aquatic animals, and the formation of nondiffusible uric acid, stored in the allantoids, by terrestrial forms. Man, of course, falls into the aquatic group inasmuch as the maternal bloodstream functions virtually as a limitless receptacle for fetal waste.

**Inorganic Metabolism**

Copper, essential to the synthesis of hemoglobin, is stored in the fetal liver, and reaches a high concentration at birth to tide the infant over the nursing period, during which the diet is lacking in this element. Iron likewise is stored by the liver and decreases steadily during the nursing period. The pigment fraction of fetal Hb is believed to be transmitted from mother to fetus through the placenta. For about two months after birth there is also an active physiological hemolysis. Infants born of anemic mothers may exhibit hypochromic anemia during the first year of life.

Following the fourth month of pregnancy there is a sharp and continued rise in calcium and phosphorus of the fetus, and these items are dependent on both the mother's intake of the minerals and vitamin D available. Before this time there is little fetal demand on the maternal supply.

—Hugh Clark, Ph. D.



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# THE LOG BOOK

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NUMBER 5

## Dr. Schwartz, New President

Dr. John P. Schwartz, for twenty-two years closely associated with Des Moines Still College of Osteopathy, and for the past seventeen years Dean of the College, has been elected by the Board of Trustees to fill the vacancy caused by the resignation of Dr. Becker.

Dr. Schwartz needs no introduction to the Osteopathic profession. He is Surgeon in Chief of Des Moines General Hospital, and head of the Department of Surgery at Des Moines Still Col-



Dr. J. P. Schwartz

lege of Osteopathy. He is past president of the American College of Osteopathic Surgeons. Under his management Des Moines General Hospital has established an enviable reputation. The college is fortunate in the fact that Dr. Schwartz will bring to the institution not only an intimate knowledge of its problems but a high degree of executive ability. His past experience and wide acquaintance in the Osteopathic profession augurs well for the continued growth and development of the college.

His reputation as a speaker and lecturer on scientific and technical matters has caused him to be much sought after by various Osteopathic groups for such contributions.

We not only congratulate Dr. Schwartz on his election to this important position, but we also congratulate Des Moines Still College of Osteopathy and the Osteopathic profession because of his willingness to assume the duties and obligations associated.

—R. F. S.

## Laboratory Diagnosis

### Pancreatic Tumors

The major findings of a laboratory nature in tumors of the pancreas will be disturbance of the blood sugar level—in most cases an hypo-glycemic response will be noted.

For carcinoma of the parenchyma of the gland, the laboratory findings are not conclusive nor differential in type, with few exceptions. The fact that an elevation of the blood lipase is characteristic, has been mentioned in a previous paper. The elevation of the blood lipase is most constant, and clear cut in cases in which mechanical obstruction in the pancreatic duct occurs. In all cases where jaundice occurs in a patient without pain, and an increase in blood amylase and lipase is found—careful evaluation of the symptoms is necessary to rule out tumors in the pancreas. Other laboratory methods which may be of value, are the Van den Bergh reaction and the fecal analysis.

The Van den Bergh will yield a direct reaction in all cases. As we have an obstructive type of jaundice; if the Van den Bergh returns an indirect reaction, the interpretation will be obvious, as being of hemolytic origin. Bilirubin may be present in the urine to be macroscopically visible, in some cases, i. e. the color of the urine may be indicative. In all cases when the concentration of 2 mg. per 100cc jaundice becomes visible in the patient.

The laboratory procedures on the fecal sample will report an increase in the fat content of the stool, and a decrease in the amount of the bile pigment. In compete obstruction of the Ampulla, the pigments urobilinogen and urobilin will be absent in both the stool and urine.

It is obvious from the foregoing discussion that the methods of laboratory diagnosis in these cases are not discriminatory but only confirmatory as to the amount of obstruction produced by the tumor.

Carcinoma and Adenoma involving the specific insulin producing islands of Langerhans is indicated by the syndrome of hypoglycemia. Pathologically the more frequent occurrence is a true adenoma in which the islets are hypertrophical and in a state of complete hyperplasia; clinically almost identical with true Carcinoma of the body of the gland. Statistically the condition

## The New Class

Never in the history of the Osteopathic profession has there been greater need and demand for competent Osteopathic Physicians and Surgeons. Never in the history of the profession has there been greater opportunity for competent young men and women to do useful humanitarian service in the great War Program confronting our nation. Never have our Osteopathic educational institutions been better prepared to give the scientific and clinical training required to prepare students for a lifework of primary and commanding importance.

Des Moines Still College of Osteopathy offers to qualified young men and women outstanding facilities to prepare for a field of work in which there is great and increased demand. The entrance requirements consist of two full years of collegiate work from an accredited college or university, without specification of subject matter. The new class beginning on June 15th will be the first class to enroll in the new plan, whereby the entire four years' work will be given in three years, by doing without summer vacations, without loss of subject matter or lowering of scholastic standards.

Now is the time to seriously consider the opportunity and privilege of preparing for a real place in the general scheme of things and at a time when there is insistent and continuing demand for competent Osteopathic Physicians and Surgeons. Join with us for a great service, in a capacity requiring competence in a highly specialized field of activity.

—A. D. B.

of the spontaneous hypoglycemia occurs at least as frequently as the condition of hyperglycemia (Diabetes). Tumor, involving the islands are not the only etiologic agent. However, and therefore, the discovery of a low blood sugar requires careful evaluation and study.

The usual symptoms associated with hypoglycemia are: hunger, weakness, tremor, perspiration, mental lapse, and at times, coma. Because of the fact that symptoms such as mental confusion, athetoid movement, irritability and restlessness are of frequent occurrence. Mistaken diagnosis of mental disease may be made. There are three distinct syndromes in which hypoglycemia

(Continued on Page 2)

## EMBRYOLOGY

### PHYSIOLOGY OF THE FETUS

#### Kidney Function

The method of urinary excretion, essential in all embryos, varies considerably. Environmental circumstance dictates to a large extent the method followed. Birds, with no means of eliminating waste, have developed a large allantoic vesicle for storing and concentrating urinary waste in order to conserve water. Because of the continuity of the allantoic and amniotic cavities through the bladder and urethra, the amnion also receives some nitrogenous waste.

Placental attachment in mammals excludes the necessity of the allantois as a storage organ; nevertheless, it develops but does not, in humans, assume avian proportions. Waste material, excreted by the embryonic kidneys, does accumulate in the allantois and also in the amniotic cavity. The bulk of the excretory problems of the fetus are solved, however, by the placenta.

The mesonephros and metanephros are both functional, and indeed for a period, both act simultaneously. It was found that Bowman's capsules eliminated sodium ferricyanide, and also that phenol red was secreted by the cells of the proximal convoluted tubules. Secretory and concentrating functions of the tubules was later observed in vitro, when phenol red and orange G were collected in the lumens of the tubules after having been taken from the culture medium.

In summary, (1) the metanephros begins to function at about 9 weeks, and secretion is continuous but slow; (2) the mesonephros begins to function earlier and its period of function overlaps that of the metanephros; (3) the rate of formation of the capsular fluid is dependent on fetal capillary pressure, osmotic pressure of the fetal blood colloids, carbon dioxide level of the fetal blood and other factors; (4) the proximal convoluted tubules contribute to fetal urine; (5) resorption takes place in the proximal tubules and in the thin

(Continued on Page 3)

## Birth

Born to Dr. and Mrs. Robt. E. Sowers of Warren, Ohio, a boy, on January 13, 1942. He has been named Jerry Robert Sowers.

# NEXT CLASS ENTERS JUNE 15, 1942

## ATLAS CLUB

The election and installation of officers for the new summer semester was held at the club on Monday, May 4. The following are the newly elected members: Gordon Elliott, noble skull; Jerry Dierdorff, occipital; Bob Patton, pylorus; Ronald Woods, stylus; Carl Waterburg, styloid; Jack Price, Sacrum; and Vernon Stoner, receptaculum.

The initiation of eight pledges took place at the frat house in the form of spring house-cleaning from May 7th to 10th, following on Sunday by the final degree of the formal initiation ceremonies. In the afternoon the annual Atlas picnic added to the enjoyment of the busy week-end. Congratulations are in order for the following new initiates: Ken Blair, Scott Heatherington, Grant Herman, Stan Kwiatkowski, Carl Nagy, Bart Nelson, Les Raub and Don Young. The fraternity is proud of its excellent group of new men and we feel that we will go places this coming semester.

The Atlas senior banquet, Thursday, May 14th, will honor three graduating members, Lyle L. Ackerson, Robert J. Hansen and Paul D. Taylor. Best of luck fellows.

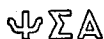


Now that the semester is about over, the sorority is again going to be very busy. Plans are being made for the dinner in honor of the sorority members who are to graduate this month. The dinner is to be held on Tuesday evening, May 19th at Mrs. Doty's Tea Room. Some business, some pleasure and some sadness will enter into the evening. Sadness only because some of our few active members are about to leave.

New officers are to be elected and installed this month. We are hoping that the summer semester will be ushered in with several new women students—but time will tell.

Delta Omega Beta wishes the graduating members all the success in the world. We have spent many happy hours together in Des Moines Still and shall miss you when you leave. So here's to you, New Alumni.

—M. W.



At the last business meeting held May 5th, Gamma chapter of Psi Sigma Alpha elected new officers as follows: President, Lou Radetsky; vice president, Ronald Woods; secretary, Willo Dunbar; treasurer, Richard Bayns; corresponding secretary, Harry Livingston, and reporter, James Booth.

—J. B.

## Marriage

On May 9th Elizabeth Taggart wa married to Dr. Robert Berger of Dayton, Ohio. Dr. Berger is a Still College alumnus.



Superb is the word for the Phi Sig Spring Formal which was held May first. Amidst the spring atmosphere of May baskets and flowers so expertly arranged by our decorating committee of Zima, Crane, Crotty and Harris, the Seniors relaxed after their tedious week of qualifyings and the under grads tried to forget their oncoming exams.

At the next regular meeting of Delta Chapter, Norman Fox, retiring president, will install the chapter's newly elected officers. The new officers are Glenn Deer, Archon; Herb. Harris, Sub Archon; Henry Shade, Pronatarius; Doug Frantz, Crusophulax; Jim Crane, Exastase; and Bill Reinfried, Phulax.

Dick Snyder and Doug Frantz are in charge of the arrangements for the Senior Banquet to be given in honor of our graduating Seniors, Brothers Deegan, Fox, Reames, Rogers and Wentling. The date for the banquet is set for May 21.

—H. G. H.



Awards for the bowling and tennis tournament will be made at the senior assembly. At the same time the two cups, given each semester by Sigma Sigma Phi will be presented. The committee consisting of Glen Deer, Gordon Elliott and Robert Hatchitt will determine the recipients. These cups are given each semester to the two graduating seniors who have been outstanding in service to Osteopathy and to the school.

Our senior banquet will be held May 12 at the Brown Hotel. Dr. Woods will be the speaker. Life-long certificates of membership will be presented at this time to our graduating brothers, Lilly, Geraghty, Landis, Randels, Wentling and Ball.

The new officers for the coming year are G. Elliott, president; G. Deer, vice president; W. Westfall, secretary; R. Bennington, treasurer.

We are happy to announce that Bill Westfall was initiated at our last meeting. Congratulations Bill and we know you will be a credit to us.



The activities of this chapter are being brought to a close for the semester.

We are pleased to announce the initiation into our chapter of William Stoler which will take place in the next few weeks.

At this time plans are in progress for the semester senior banquet in honor of our graduating seniors. We want to take this opportunity to wish all the graduating seniors the best of luck. We know that they will carry the banner of osteopathy proudly with them.

To Dr. Becker go our thanks for many years of pleasant association together. We will all miss him immensely and wish him the best of luck.

—I. A.



Our last regular meeting was held April 22 in the office of Dr. Donald Sloan. At this meeting Larry Beldon was appointed captain of the golf team which will participate in the forthcoming golf tournament. Plans were also made for entering a tennis team in the tennis tournament, one of the features of the school picnic. Much enthusiasm was manifested in these two sporting events. Although Iota Tau Sigma did not win the bowling tournament, those taking part had a most enjoyable time and are looking forward to next year's competition.

—E. M.

## Laboratory Diagnosis

(Continued From Page One)

may be observed other than the involvement of the pancreas—these are Addison's disease, pituitary tumor, and the diabetic on a very restricted carbohydrate intake. It is of importance to the osteopathic physician that perversion or section of the nerve supply to the liver will result in immediate hypoglycemia.

The laboratory procedures available for estimation of the extent of hypo-glycemia are based on the sugar tolerance of the individual patient. Fundamentally the patient suffers from the lowered blood sugar because of the presence of an over supply of insulin. The routine glucose tolerance test as previously described may be employed, a "plateau type" of curve will in most cases be obtained. This type of curve indicates an increased tolerance to glucose, and a decline to the hypo-glycemia level at some time after the ingestion of the sugar. A typical response will be:

Fasting specimen .....70mg %  
Given 100 grams of glucose.

1 hour specimen .....85mg %  
1½ hour specimen .....89mg %  
2½ hour specimen .....85mg %  
3½ hour specimen .....50mg %  
4½ hour specimen .....50mg %

In the employment of the intravenous administration of glucose, it is found that an increased utilization of glucose is apparent. In a typical case, a patient utilized 1.3 grams of gucose per kilogram per hour, in comparison to the average value of 0.8 grams. This represents an increase of 63%.

In some cases, the low blood sugar level may not be demonstrated at first in suspected hypoglycemic states; in these cases it is necessary to subject the patient to a fast, of an absolute nature, normal activity being permitted during the interval, under ordinary cases, 12 hours is sufficient to reduce the sugar to abnormal levels.

It is apparent from the foregoing discussion, that blood sugar estimation should be of routine value, in dealing with the vague and rather inconclusive symptomatology of lassitude, memory-loss and irritability.

R. C. Rogers,

## DESERT-ATIONS

I had the pleasure of attending the state convention at Raton, New Mexico, April 23, 24 and 25. Aside from the expected excellent talks and much constructive planning by our officers we had a very unexpected feature. Raton suffered a complete loss of water supply due to a flood the day before the convention. A small thing like a shortage of water could not dampen the enthusiasm of that bunch that attends the Raton Convention. Dr. Harold Donovan and his able aides carried on just the same as if under normal living conditions and the crowd of about 150, including visitors, had even a better time than in any of the previous eleven years of this meeting.

I got a great thrill out of talking to Dr. Ernie Johnston's wife, Deanne. Not so long ago a baby was brought to them having been given up to die by a local M. D. Dr. Ernie and Deanne started to work and Deanne spent the next ten days at the side of that baby doing without sleep and food and losing her own strength plus five pounds in weight. With the help of oxygen and osteopathy the baby lived and I would say with the excellent nursing that Deanne so freely furnished. The detail of it all, as she told it to me, would make excellent reading but it needed the radiance of success that sparkled from her eyes as she told modestly of her part and proudly of Dr. Ernie's faithful treatment. These two, working and working hard in the desert country, are true pioneers and my hat is off with a low bow to both.

The past month has been colorful with desert and cultivated flowers everywhere. Mocking birds, Orioles and Wild Canaries vie with each other for the air and dive-bombing Humming Birds boom around the honeysuckle. The streets were filled today with all of the brilliant colors of the rainbow as we watched a parade of Ranch Hands, Sheriff's Posse and State College Sudents taking part in the Annual Spring Rodeo. The first of the week we enjoyed attendance at a meeting of the American Association for the Advancement of Science and had the pleasure of entertaining Dean Cummings of U. of Arizona. The Dean substituted for me when Frances was married, giving the bride away, and so he is a sort of an adopted member of the family. Eighty years young and you should have heard his talk on the restoration of Kinishba. My Staff Sgt. son Morrie writes from Ireland but it takes three weeks to get a letter and the news is not very exciting as you may guess. The other member of the defense part of the family is now working along the border someplace.

Keep June 15th in mind. A student from your home town should be entering the study of Osteopathy on that date. Have you planned who will take your place when the time comes?

—H. V. H.

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Richard F. Snyder, B. S.

Advisor.....Arthur D. Becker

**Osteopathy Without Limitation**

## Dr. Becker Leaving D. M Still College

At the request of Dr. Arthur D. Becker, for seven years president of the Des Moines Still College of Osteopathy, the board of trustees Monday night made effective his resignation, submitted more than a year ago.

The board, which had requested Dr. Becker to remain until a successor could be obtained, elected Dr. J. P. Schwartz, a member of the board of trustees and for many years dean of the



ARTHUR D. BECKER, D. O. college, to fill the vacancy. Dr. Schwartz will assume his duties June 1.

Dr. Becker plans to divide his time in the future between Michigan and Florida. He and Mrs. Becker will leave June 1 for their summer home in Lake Orion, Mich., and will spend next winter at Orlando, Fla. Dr. Becker will remain at the college for a short time in an advisory capacity.

During Dr. Becker's tenure of office, the bonded debt of the college has been reduced more than \$94,000 and \$10,000 has been spent for modern laboratory equipment. The faculty has been increased and scholastic standards have been raised.

Des Moines Still College of Osteopathy is accredited in the American Association of Osteopathic Colleges.

Dr. Becker was graduated from the S. S. Still College of Osteopathy in 1903.

He served as national president of the American Osteopathic association in 1931-32 and was a trustee of that organization for 15 years.

While practicing in Minnesota, Dr. Becker was twice president of the Minnesota State Osteopathic association and was a member of the board of examiners of that state for nine years. He has been a member of the National

Board of Osteopathic Examiners since its origin.

### Honorary Degree

Dr. Becker was awarded the honorary degree of doctor of science in osteopathy by the Kirksville (Mo.) College of Osteopathy and Surgery. At the 1941 convention of the American Osteopathic association, he was given a distinguished service certificate.

The retiring president has specialized in diagnosis and cardiology. Before returning to the Des Moines school, he was vice president of the Kirksville College of Osteopathy for 13 years.

Dr. Becker's local affiliations include membership in the Kiwanis club, Chamber of Commerce, Des Moines Dinner Club and University club. He is a member of the board of deacons of Plymouth Congregational church.

### With College 22 Years

Dr. Schwartz has been associated with the college 22 years. He is a past president of the American College of Osteopathic Surgeons. He is surgeon-in-chief of Des Moines General hospital, and head of the department of surgery at Des Moines Still College of Osteopathy, and is widely known in the osteopathic profession throughout the country.

—Courtesy Des Moines Register

## Embryology

(Continued From Page One)

segment of Henle's loop; (6) fetal excretion is very similar to that of the adult, with perhaps more emphasis being placed on tubular excretion; (7) the **placenta is the chief organ of excretion of the human fetus.**

### Amniotic Fluid

The early amniotic fluid is almost certainly formed by the mother, rather than the fetus. Some chemical compounds, enzymes and antibodies of the mother have been recovered in the amniotic fluid, but not in the fetal tissues. However, it is also quite certain that a large part of the fluid later in pregnancy is the result of fetal renal action, as well as by secretion from the amniotic membrane.

The amniotic fluid acts as a partial reservoir for fetal waste products. It also performs several other functions, including (1) provision of an aquatic environment, allowing the uniform development of different parts of the embryo; (2) prevention of embryonic adhesions; (3) protection against shock and drying, although these functions are shared with the chorion and uterus; and (4) action as a hydraulic wedge for the descending head during birth and permission of postural adjustments of the fetus.

### Skin

Sweat glands are formed with lumens at the seventh month, but it is doubtful whether they are functional in utero. Sebaceous glands are functional and contribute an oily material to the vernix caseosa, along with the lanugo hair and desquamated epithelium. The function, if any, of this debris is unknown. If not removed at birth, it will be ab-

sorbed in about 8 hours. The mammary glands are functional in a peculiar way at birth, producing in both sexes "witch milk." Lacrimal glands are well formed, but apparently non-functional, at birth.

The ability to regulate temperature is very slightly developed in the human at the time of birth. Practically no ability to reduce body temperature exists, although it may be raised by increasing the rate of metabolism through muscular exercise.

## ENDOCRINE GLANDS

### Suprarenal Cortex

There is some, albeit little, evidence that a cortin-like hormone is produced by the fetus and that the hormone may prolong the life of an adrenalectomized mother. Of greater interest is the x-zone of the fetal cortex which is so disproportionately large in the fetus. Because of a supposed andromimetic action, it has been called also the androgenic zone. Observers believe that it may serve to counteract feminizing secretions of the mother. Antaomically it is better understood, for it constitutes 0.2% of the body weight at birth. The adrenal x-zone begins involution at birth, and within a week the entire gland has lost one third of its weight; degeneration continues for about a year, at the end of which time four fifths of the original weight of the adrenal has been lost.

### Suprarenal Medulla

The adrenal medulla begins at about seven weeks gestation by migration of neural crest cells into the cortical tissue. About the middle of gestation, epinephrin is produced by the glands and coincidentally the tissue acquires its definitive chromaffin character in most animals tested. These observations are contrasted with the **late human development** of functional capacity of the adrenal medulla, which is only slightly functional until after birth. Extreme development of the cortical androgenic zone may be correlated with the medullary deficiency.

### Sex Glands

Male sex hormones can be extracted as soon as the testis is differentiated (about seven weeks in man), and the content from fetal testicular tissue is proportionately greater than that of the adult. The best source of evidence for physiological activity of fetal male hormone is derived from a study of the freemartins in cattle, when the blood streams of the male and female twins are conjoined. When the circulations of male and female are discrete, both male and female develop normally; when the blood of the two mixes the heifer is masculinized. Such results may be experimentally duplicated in other animals by the injection of testosterone. The reserve situation has also been created by the injection of estrogenic hormones into mothers, with the result that feminized males are produced. The extent to which maternal hormones affect normally devel-

oping fetuses is not known, but diminution in size of the fetal uterus after birth and secretion of "witch milk" in both sexes are indicative of a true influence.

### Thyroid

This gland begins endocrine activity early in development; thyroglobulin has been identified by a precipitin reaction as early as the third month, and iodine is known to be present by the sixth month in humans. Fetal thyroids behave in the same manner as adults with respect to amphibian metamorphosis, when taken from both three and five months human fetuses. The maternal hormone in the human is available to the fetus, and an athyreosis may develop after parturition although none was present in the fetus.

### Thymus

There is virtually no evidence for an endocrine function of the thymus. It is apparent in human fetuses of about three months as a lymphoid organ. The experiments of Rowntree, involving injection of thymic extract into several successive generations of rats resulted in more rapid growth, sexual precocity and greater size of offspring; but these results lack confirmation by other workers.

### Hypophysis

Neither posterior lobe extracts nor gonadotropic hormones of the anterior lobe, when injected into rabbit fetuses, produced the usual effects on the mother; likewise maternal injections failed to appear in fetal fluids, strongly suggesting that the placenta is not permeable to these substances.

A pressor substance has been identified in the human hypophysis at six months fertilization age. Growth promoting substances from the anterior lobe, however, appear later; and gonadotropic hormones are the last to become functional.

### Insulin

Islets of Langerhans can be discerned at three months, but probably are not functional at this time. Because of the correlation of time of appearance of glycogen in the fetal liver and development of islet tissue it is thought that fetal insulin plays an important role in carbohydrate metabolism. It has also been found that diabetic mothers have been protected during pregnancy by the fetal pancreas, though pancreatic hyperplasia in the fetus may accompany the protection and result in postnatal hypoglycemia.

(This series of articles based on Windle's **Physiology of the Fetus** will be concluded in the next issue of the **Log Book** with a review of the fetal muscular and nervous systems.)

—Hugh Clark, Ph. D.

## Address Changes

Every month we receive returned copies due to a change in address.

We would appreciate notice of any change in order that you may receive your copy of The Log Book without delay.

## I. S. O. P. S.

## Forty-Fourth Convention

The Forty-Fourth Annual Convention of the Iowa Society of Osteopathic Physicians and Surgeons was held in Des Moines on May 6 and 7.

The following officers were elected on Thursday, May 7: President, Mary E. Golden, Des Moines; vice president, J. K. Johnson, Jr., Jefferson, and Dwight S. James, lay secretary-treasurer.

Trustees elected for three-year terms are W. S. Edmund, Red Oak, and J. R. Forbes, Swea City.

Marvin E. Green, Storm Lake, was elected to the legal and legislative committee for a five-year term succeeding R. P. Westfall, of Boone.

Delegates to the American Osteopathic Association convention at Chicago, Illinois, are Mary E. Golden, J. K. Johnson, Jr., and Holcomb Jordan.

## Department and Committee Chairmen

President Golden has appointed the following as department heads and committee chairmen for the present year: Department of professional affairs, J. K. Johnson, Jr., Jefferson; membership, H. L. Gulden, Ames; convention program, J. K. Johnson, Jr., Jefferson; hospitals, L. W. Jamieson, Sioux City; ethics and censorship, J. W. Rinabarger, Keosauqua; vocational guidance, John Q. A. Mattern, Des Moines; convention arrangements, Ruth Paul, Des Moines; Ophthalmology, H. J. Marshall, Des Moines; public and professional welfare, Theo. M. Tueckes, Davenport; press relations, J. R. Forbes, Swea City; public education, Harold D. Meyer, Algona; radio, Paul E. Kimbberly, Des Moines; department of public affairs, D. E. Hannan, Perry; veterans affairs, H. D. Wright, Hampton; child health conference, H. A. Barquist, Des Moines; industrial and institutional service, Dale S. House, Dubuque.

## Special Committee

President Golden has named J. R. Forbes, Swea City, chairman of the fiftieth anniversary celebration of osteopathic education. The celebration will be held in Iowa, and throughout the nation, on October 3, 1942.

## Personals

E. W. McWilliams was recently elected mayor of Columbus Junction.

R. K. Richardson, of Wesley, is now serving as president of the Wesley public schools.

George C. Keays has been appointed city health physician by the mayor of Gravity.

## Membership Applications

Mabel E. Andrews, Perry  
Wesley Glantz, Des Moines  
Geo. W. Marston, Lewis  
R. K. Richardson, Wesley  
Harry E. Wing, Ottumwa  
J. G. Garton, Chariton  
L. D. Barry, Belle Plaine  
Phil McQuirk, Audubon  
Lillian M. Dunlop, Pocahantas  
Frances G. Saylor, Storm Lake  
H. H. Bobenhouse, Earlham.  
—Dwight S. James

## Pursuit for a Reason

We have considered briefly the varying pathology in the osteopathic lesion area during its incipency. It is diffuse or local, depending upon the etiology. After 48-72 hours, the pathological process involves a far greater amount of tissue. In fact the secondary process is fairly general in the area—affecting even the area of initial trauma in the overtly primary lesion. This is the pathologic process we now wish to consider, both generally and specifically, and it is vitally interesting in that it demonstrates the source and mechanism of the reflex effect of a lesion, or the mechanism of every somatic or visceral expression.

Regardless of the etiologic factor after the time interval mentioned, the tissue in the lesion area has a number of factors of great concern. There is an ischemic factor due to arterioar or arterial constriction that is transient but recurs frequently. Secondly, there is an hyperemic and engorging factor that follows each ischemic phase, and it can either be corrective or cellularly traumatic. Thirdly, the most commonly found element is passive congestion. The definite congestion and engorgement of the venous and lymphatic return channels that is parent to a great number of effects on colloidal tissue. It introduces another ischemic factor, metabolic disturbance, pH change of measurable amount, fluid storage, acidotic edema and + hydraulic pressure, marked increase, and marked variation in muscle tension, and muscle, and nervous motor units, these being also of measurable degree.

First the ischemic factor due to the segmental stimulation. The segmental hyper-irritability is produced by the mass stimulation of the afferent end organs due to local trauma, or the constant irritation of those end plates caused by the inflammation in the viscus, or the segmentally related somatic area. The great number of afferent impulses bombard the given cord segment, and produce a state of segmental hyper-irritability. The cord segment, or nucleus functions in direct proportion to the total number of afferent impulses from all sources. These impulses are transferred to the connector neurones as well as to the anterior horn cells through the associational fibers. The motor cells in the anterior horn respond by contracting the segmentally related musculature. That part of the nerve tissue involved being primarily affected, hence certain muscles and parts of muscles are affected more than other parts of the same muscle. The contracting muscle requires for normal function a greater amount of oxygen, glucose, and a greater venous and lymphatic return and intermittent regular relaxation phases. In the lesion area this is prevented by the same factor that produced the contraction of the muscle. The impulses passing along the connector neurones are spread widely to the cells of

origin of the grey rami communicantes, and through those fibers by way of the same spinal nerve causes vaso-constriction in the area. Hence instead of having a vaso-dilation and greater amount of glucose and oxygen there is a reduction in these elements. The maintained contraction impairs the motion factor so essential in venous and lymphatic return, and the products of metabolism are permitted to accumulate. A state of ischemia then exists. The muscular tissue is forced to contract, and at the same time the essential elements for supply to the muscle in contraction are reduced in amount. This ischemia has a chemically traumatic effect upon the tissue. The metabolism is perverted, and the acid products are accumulated due to the venous and lymphatic impaired return. There is due to the ischemia a destruction of some cells and Histamin or Boyd's H substance is liberated. A vaso-dilation or paralysis of the neuro-muscular mechanism in the artery and arteriols results, and the capillaries are increased in permeability. For all we know this may be the actual mechanism of vaso-dilation following any maintained vaso-constriction. With the development of the paralysis of the blood vessels and the capillary dilation the stage of ischemia due to vaso-constriction and muscle contraction is brought to an end. The active hyperemia that results may neutralize the tissue acidity—restore normal alkaline balance, carry adequate oxygen to the area, and if the muscle relaxation phase is present, the venous and lymphatic return facilitated, then the inflammation may be reduced. Doubtlessly in this phase most expressions correct themselves.

If, however, the muscle contraction remains, then the active hyperemia further congests the area. Without the motion factor and without muscle contraction followed by relaxation the return circulation is inhibited. During the engorgement due to active hyperemia there may be palpable pulsation if a large muscle is involved, and far more frequently the patient is aware of a throbbing pain associated with each heart beat. The same pulsation can be occasionally produced by applying heat to the body surface when the inflammatory changes are in this degree. The momentary increase in pressure due to the arterial wave added to the pressure of edema on the sensory nerve terminals is productive of the pain or throbbing. At this state an ice-bag is indicated more than heat to prevent the engorgement as much as possible. Such treatment is indicated early in any acute myositis or even in fractures. If fracture is not present the early use of ice to prevent engorgement and mild massage to facilitate venous and lymphatic return may abort or render less acute and far more rapid recovery from the inflammatory process.

The state of detectable active hyperemia is of short duration for with a greater supply of fluid going into tissue and less return-

ing it is only a matter of several hours at a time that the hyperemia can exist until a state of complete passive congestion results.

It is during the state of active hyperemia with the co-incident myospasm that not only acute throbbing pain frequently occurs but also hyper-function of certain viscera that are normally inhibited by sympathetic stimulation. This active hyperemia produces in visceral tissue excessive secretion, excessive motion, perversion of motion, etc., hence for a period diarrhea, polyria, vomiting, excessive pulmonary secretion and asthmatic attacks and other effects can be so induced by the transient periods of a lesion in which there exists an active hyperemia. These effects are normally the result of parasympathetic stimulation.

Thirdly and most commonly passive congestion or venous and lymphatic congestion is encountered in the lesion area. Almost from the onset of the lesion, be it primary or secondary, varying amounts of venous and lymphatic congestion occurs, the same being true for the related viscera. This tertiary effect upon visceral function is one of decreased function to most of the viscera, particularly to the G.I. or G.V. tracts. There is decreased function, decreased secretion, diminished motion or peristalsis, and impaired trophism. A rich arterial supply is necessary to get such secretion and a passive congestion reduces such secretions. Many of the bodies secretions are bacteriostatic such as the nasal, sinus and respiratory mucosal fluids. Some secretions are locally self protective as the anti-enzymes of the stomach and intestines that prevent our own colloidal tissue normally from being broken down by the proteolytic action of pepsin with HCl and trypsin. Hence it is easily understood how the effect of the lesion upon the viscus—impairing its secretion or function predisposes to infections and metabolic diseases.

The passive congestion in tissue produces a characteristic train of events that is evidently the basis of all inflammation in absence of infection, and even then the infectious process is only added to this basis of inflammation.

Venous and lymphatic congestion causes the accumulation of normal and abnormal metabolic products in the tissues. These products are acid and lower the pH of the tissues. An increased Hion concentration has a profound effect upon tissues and their physiologic function, but the visible effect first is edema. This fluid storage is seen in and between cells in any area of inflammation. There is capillary damage and red and white cell infiltration into the area. This inflammation and the perversion of physiology will be discussed regarding each of the tissues separately.

—Byron E. Laycock

## Birth

Dr. and Mrs. R. E. Lingenfelter announce the birth of a son, Stephen Irwin, on May 1st, 1942.



Entered as second class matter, February 3rd, 1923, at the post office at Des Moines, Iowa, under the act of August 24th, 1912.

# THE LOG BOOK

Accepted for mailing at special rates of postage provided for in Section 1103, Act of Oct. 3rd, 1917, authorized Feb. 3rd, 1923.

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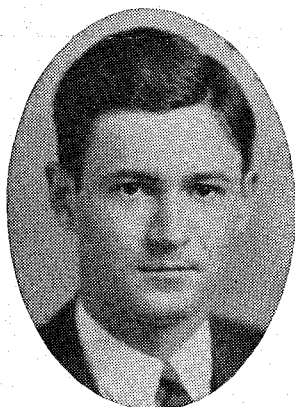
NUMBER 6

## EMBRYOLOGY

### PHYSIOLOGY OF THE FETUS (Concluded)

#### Fetal Muscles

Contraction of smooth, cardiac and skeletal muscle occurs embryonically before innervation of the fibers. The myoblasts respond



Dr. Hugh Clark

to chemical, thermal and electrical stimuli before myofibrils are discernible, and therefore before cross-striations have appeared. As might be expected the threshold of mechanical stimulation decreases with anatomical perfection of the muscle. These earliest contractions occur in human embryos of about 5 weeks and innervation of the shoulder muscles has been observed at about 7 weeks.

The first muscular responses are simple twitches in all types of muscle. Later the twitches become rhythmic, as in the amnion and heart. Rhythmicity has been observed in skeletal muscle also, but ordinarily as development proceeds it responds only to nervous stimuli which may or may not be rhythmic. With increase, in age, of course, larger number of fibers respond simultaneously so that tetanic contractions may be elicited at an early age. Such responses may also be evoked by electrical or mechanical stimulation of the cord itself.

#### Nervous System

Functionally development of the nervous system is manifested in many instances in muscular response, and as these increase, so-called behavior patterns are instituted. Three steps occur in the formation of behavior patterns: myogenic responses illu-

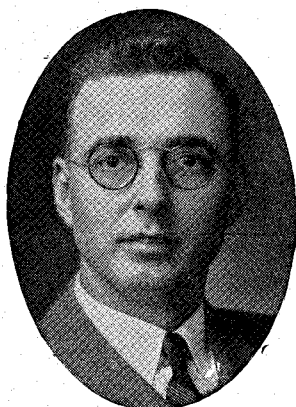
(Continued on Page 3)

## Registration of Diathermy Devices Required by FCC

All possessors of diathermy apparatus must register each such device with the Federal Communications Commission in Washington, D. C., by June 8, 1942. Application for registration shall be made on forms furnished by the FCC. The forms shall be obtainable from the FCC, Washington, D. C. or from any of the field offices of the Commission. Convenient field offices for physicians in Iowa are: Inspector in Charge, FCC, 809 U. S. Courthouse, Kansas City, Mo.; Inspector in Charge, FCC, 246 U. S. Courthouse, Chicago, Illinois; Inspector in Charge, FCC, 208 Uptown Post Office & Fed. Cts. Bldg., 5th and Washington Sts., St. Paul, Minnesota. (See June A.O.A. Journal, pgs. 441, 442.)

## Dr. R. B. Bachman Returns

Good news for his many friends was that Doctor R. B. Bachman is back for the coming semester to teach the senior obstetrics



Dr. R. B. Bachman

class. Dr. Bachman is perhaps one of the outstanding obstetricians in the state of Iowa and needless to say the students of Still College are extremely happy to have him back on the faculty.

Another new name on the faculty is that of Doctor Merle B. Landis who will teach Bacteriology in addition to his duties in the obstetrical department.

Dr. Landis is a May graduate of Still College.

## National Roster Of Scientific and Specialized Personnel

In the very near future the National Roster of Scientific and Specialized Personnel, Washington, D. C. (See April Journal, p. 352) will be mailing to every osteopathic physician in the United States and territories, regardless of age or sex, a questionnaire and a technical check list both of which must be filled out and returned at once.

The purpose of the questionnaire is to elicit a complete file of information concerning education, experience, scientific and professional affiliations and other data. The purpose of the technical check list is to develop for each science or profession a comprehensive analysis of the activities in the respective fields being surveyed.

The questionnaire and check list are entirely separate from the Selective Service Occupational Questionnaire which most everyone has received, filled out and returned by this time and again separate from the regular Selective Service Questionnaire which is being mailed at the present time to registrants in the Third Registration (ages 20 to 21 inclusive and 37 to 44 inclusive).

It is imperative that every physician, male and female, active or retired regardless of how many other questionnaires have been filled out already sign and return the National Roster's question-

## Looking Forward

At the time this issue of the Log Book goes to press, activities in and about the College are at a high peak. The new class promises to break recent records in numbers, and gives every evidence of a high quality of membership. They come from widely scattered areas, from as far east as West Virginia and as far west as Utah. In spite of the fact that enrollment has been considerably lessened, due to the various activities associated with the War Program, the past year has been a most successful one, and with the fine new class entering, the prospects for a constructive year ahead are excellent. The Faculty has been increased and there has been some re-arrangement of faculty load. Our new President, Dr. J. P. Schwartz, with his fine understanding of college problems and needs, brings a new enthusiasm to the institution that speaks well for its continued progress and development.

A new waiting and lounge room has been provided by the Student Council for the student doctors in attendance on the various clinics. They aim for increased interest and comfort for those engaged in these services.

There has been a feeling of wonderment, and perhaps a little apprehension, concerning the new plan of conducting the regular college session during the summer months, but if the spirit of interest and enthusiasm manifested continues, we have every reason to believe that it will prove to be a most successful venture. Both faculty and student body feel that it is their privilege and opportunity to make this contribution to the War Program, and it is done gladly and generously. We are on the mark, we are set, and ready to go!

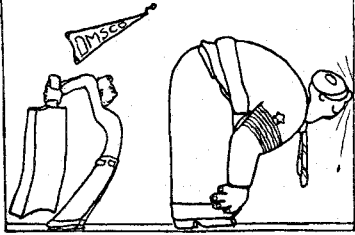
—R. F. S.

naires and check list just as soon as received. The Government has an accurate check on whether or not you return your questionnaire and check list not only through the Selective Service System but also through information supplied by the American Osteopathic Association.

The American Osteopathic Association is cooperating with the Government in the mechanical details involved in the mailing of the National Roster's questionnaire and check list.

## NEXT CLASS ENTERS OCT. 17, 1942

## FRATERNITY NOTES



ΦΣΓ

Before leaving for a short summer vacation, several of the members of Phi Sigma Gamma had the pleasure of taking part in the wedding of Brother Fox and Miss Dorothy Baker. Brother Phil Reames was best man, Brother Crotty, vocalist, Brothers Deer, Wentling and Lewis ushers. Brother Harris played for the formal reception held in the church parlor after the wedding. All the members gave the newlyweds their best regards.

By fate of war, all the students have had to return for the summer session. Although we are all going to miss the "good old summer time," we all feel better to think that we are doing all we can to contribute to the war effort.

All the members of Phi Sigma welcome the new men who have entered school this summer. We are always glad to see such a large class as has entered this June—especially during such a trying time. We will try to be of all possible assistance in your orientation and hope that we will see you after.

We hope to see many of our alumni who are passing through Des Moines on their summer vacations. The house is always open and some practical advice from an alumnus in the field is always welcomed.

—H. G. H.

ΔΩ

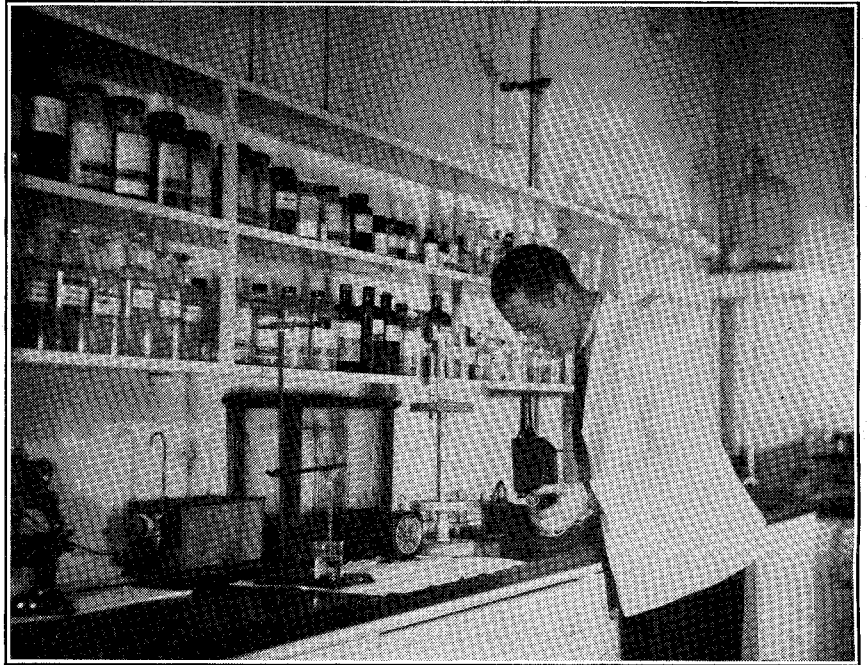
At a called noon meeting of the chapter, the following officers were elected and installed.

Mary Toriello, President; Mary William, Vice President and Corresponding Secretary; Emma MacAdams, Treasurer; Mary Klesner, Recording Secretary and Guard.

A dinner was held in honor of the graduating seniors, Rachel Ann Payne, Mildred Weygandt and Maxine Seablom, at Mrs. Doty's Tearoom May 20th. At this time the graduates were presented with Life Membership Certificates and gifts from the Sorority. At this same dinner the Sorority honored Dr. Mary E. Golden in her thirtieth year of practice and presented her with a small gift. Those present were: Drs. Mary E. Golden, Rachel Payne, Mildred Weygandt, Maxine Seablom, Ruth Paul, Rachel Woods, Mrs. A. D. Becker, Mrs. Kenworthy, Mrs. Facto, Mrs. Laycock, Mrs. Cash, Mary Klesner, E. L. MacAdams and Mary Williams.

Again a new semester is start-

Clinical  
laboratory for  
blood and  
urine analysis



ing, and although our number has been greatly decreased, we expect to have a busy and delightful summer.

—M. W.

## O.W.C.C.

The Osteopathic Women's College Club met June 16th in the lounge of the Taylor Clinic. This meeting was held in honor of the newly enrolled student's wives. Those present of this group were: Mrs. Blackler, Mrs. Sherwood, Mrs. Christiansen, Mrs. Schwab and Mrs. Merrill.

The capable Mrs. H. J. Marshall has accepted the position of sponsor of the O.W.C.C. We wish to welcome Mrs. Marshall to our group.

Ambitious plans for the coming semester were outlined.

—P. H. S.

ΛΟΓ

Lambda Omicron Gamma, Calvaria chapter wishes to extend its greetings to all. Despite the short vacation we are all glad and eager to be back at our work. To the new faces we extend our heartiest congratulations on your choice of Osteopathy as your profession, and wish you all the best of luck.

The first meeting of the new semester will have been held by the time this edition comes off the press. Presiding will be the new officers, Louis Radetsky, cerebrum and Arthur Abramson, cerebellum. At this meeting the foundation of our plans for this new semester will be laid.

—A. A.

Buy  
War Savings Bonds  
And Stamps

"We often speak of truth. We say great truth, and use many other qualifying expressions. But no one truth is greater than any other truth. Each has a sphere of usefulness peculiar to itself. Thus we should treat with respect and reverence all truth, great and small. A truth is the complete work of Nature, which can only be demonstrated by the vital principle belonging to that class of truths. Each truth or division as we see it, can only be made known to us by the self-evident fact, which this truth is able to demonstrate by its action."

—Still.

Still College recently received the first registration for the fall semester of 1943, that of Harry Elston, son of Dr. H. E. Elston of Niles, Ohio. Harry, an honor student in high school has entered his pre-osteopathic work.

Dr. Elston is a 1924 Still College graduate.

## The Senior Banquet

On Monday evening, May 25th, one of the most brilliant and colorful events of the college year was celebrated in the Senior Banquet at Younkers beautiful Tearooms. Covers were laid for sixty and the tables were beautifully decorated with peonies from the gardens of Dr. John M. Woods. Short talks were given by Dean J. P. Schwartz, the new incoming President of the College, by Dr. John Woods, the Faculty Adviser of the Class, by Orva L. Wentling, the President of the Class, and by Dr. Arthur D. Becker, Master of Ceremonies. An air of happy and carefree spirit was evident, and it was a genuine pleasure to have the wives and parents of members of the Senior Class present.

These Senior Banquets extended to the members of the graduating class and their friends by the Officers and Faculty of the College are high-spots in memory for those participating.

—R. F. S.

## HOURS FOR RED CROSS INSTRUCTORS' AND STANDARD FIRST-AID COURSES DURING THE A.O.A. NATIONAL CONVENTION

	Instructors' Course (doctors only)	Standard Course (lay persons)
Mon., July 13	3 to 5 p. m.	1 to 3 p. m.
Tues., July 14	8 to 12 noon	2 to 5 p. m. 7 to 9 p. m.
Wed., July 15	8 to 12 noon	3 to 5 p. m.
Thurs., July 16	8 to 12 noon	9 to 12 noon 2 to 5 p. m.
Fri., July 17	8 to 12 noon 1:30 to 5:30 p. m. 7 to 9 p. m.	9 to 12 noon 2 to 4 p. m.
Sat., July 18	8 to 12 noon 1:30 to 3:30 p. m.	

Total 30 hours

Total 20 hours

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Richard F. Snyder, B. S.

Advisor.....Arthur D. Becker

Osteopathy Without Limitation

## The Graduating Class

On May 29th, 1942 Des Moines Still College had the happy pleasure of graduating a fine group of Osteopathic Physicians and Surgeons, numbering twenty-seven. Commencement exercises were held in the beautiful auditorium of St. Johns Lutheran Church. The speaker of the evening was Bishop J. Ralph Magee of the Methodist Church, who with his fine background of experience, gave a most eloquent and thought-provoking address. His subject was "The Unearned Increment of Personality."

Immediately following the recessional, a reception was held in the parlors of the church, where the members of the graduating class had the opportunity of meeting and receiving the congratulations of their many friends present.

A very large percentage of the class plan to take internships in various Osteopathic Hospitals in different parts of the country, from Boston to Denver. Obviously Des Moines Still College of Osteopathy has a continued interest in each of the members of this class, and extends to them sincere best wishes for success in their somewhat widely chosen fields.

—R. F. S.

## Pursuit for a Reason

The processes of inflammation as they occur in the lesion area, the means of their detection or demonstration, their effect locally and remotely on the mechanisms of the production of that effect are all of major importance. Each cannot be given the intricate consideration they deserve in a paper of this brevity but an attempt will be made to mention each of the factors above and some indication as to their relative importance as we visualize the lesion involvement of each tissue present.

1. Bone. Unfortunately the term Osteopathy suggests to those ignorant of the Science, that the major point in an Osteopathic lesion would be a pathological change in the bone tissue. Actually bone tissue in the lesion area is only mildly altered and then only after the protracted presence of lesion pathology. It is true that certain medullary canal

(Continued on Page Four)

## Senior Awards

### Anatomy

Lyle L. Ackerson, Jack R. Lilly, John A. Link, Rachel Ann Payne, Philip W. Reames.

### Obstetrics

Lyle L. Ackerson, Merle B. Landis, Rachel Ann Payne, Philip W. Reames.

### General Clinic

Lyle L. Ackerson, Merle B. Landis, Philip W. Reames, Orva O. Wentling.

### Gynecology

Charles S. Randels.

## Embryology

(Continued From Page One)

strating muscular competence; neuromotor activity, developed first in the trunk-shoulder region; and lastly, reflex pathways, which follow closely upon the establishment of neuromuscular connections.

Reflexes cannot become completed until afferent and efferent pathways are formed, as well as receptors, connector neurons and synapses. Two conceptions regarding the origin of complicated reflex behavior: (1) individuation from a fully integrated total pattern and (2) separate appearance of local reflexes until the mass reactions can be accomplished. Suffice it to say that the mode in humans probably is the latter, whereas the former develops in lower vertebrates which do not show such marked, early cephalic dominance. The first movements to appear in humans, at approximately 7 weeks, are extension of the head and motion of the forelimbs. These are distinct and are both of reflex nature, which can be elicited in a variety of ways besides direct stimulation of the face or forelimb. Such physiological responses are correlated with histological pictures which indicate that the first reflexes are of the two or three-neuron type.

Following the appearance of many isolated, local reflexes such as those mentioned, integration of reflexes begins to develop as the tracts of the cord become functional. The first of these to develop is the ventral longitudinal bundle; commissural neurons develop at about the same time and result in contra lateral reflexes. Next, nerve fibers grow caudally from the medulla and midbrain so that caudal stimulations of an 8-9 week fetus may result in (a) local reflexes, (b) reflexes involving more cephalic parts, (c) head movements and (d) trunk movements correlated with the head movements.

The reflex arc is initiated by the formation of motor neurons which first establish connection with muscles; their appearance is followed by that of association neurons and the last to appear are the afferent fibers. All of these elements are laid down before synaptic connections are made, and in a sense, reflex behavior is actually delayed because

of the necessity for completion of the synapse.

Among the first connector neurons to appear are those in the reticular formation of the medulla which send fibers into the cord. Simultaneously midbrain neurons differentiate and extend caudally, forming a part of the median longitudinal bundle. These are followed by tectal neurons which contribute to the tectobulbar and tectospinal tracts, differentiating in about the 5th week in man. Four groups are thus developed: (1) local inter- and intrasegmental elements, constituting the ground bundles of the cord (2) reticulospinal tracts, (3) medial longitudinal fascicles and (4) tectobulbar and tectospinal tracts.

Spinothalamic fibers are next formed, and shortly thereafter, thalamocerebral fibers appear. It is only late in fetal life, however, that the cerebrum exerts any considerable influence over lower motor activity. Some have maintained that myelination is essential for function in the tracts of the brain as well as elsewhere but this does not seem to be true. Myelination and order of development anatomically may be correlated, but myelin is not a physiological necessity.

In spite of the early neuromuscular abilities of the fetus, little movement occurs in humans until the fourth month of gestation. This lack of movement may be explained by inadequate intrauterine stimuli and also by the high threshold in the fetal central nervous system. It has been observed in lower mammals that spontaneous motor discharge ordinarily does not occur; afferent fibers and completion of reflex pathways are usually necessary. The threshold may be lowered by reducing the oxygen content in the blood to the fetal brain, without actually producing asphyxia; the result is more pronounced movements upon stimulation and even spontaneous, rhythmic respiratory movements. The oldest established reflexes are the last to be affected by anoxemia.

### Fetal Motor Reactions and Reflexes

Respiratory movements have been discussed previously (*Log Book*, March, 1942). Likewise, sucking and swallowing mechanisms are completed well before birth. At 9 weeks opening and closing of the jaws is possible, and shortly after this, the tongue may be protruded, although its edges cannot be rolled up until several days later. Lip movements have been seen at about 10 weeks. It would be safe to conclude that the complete, rhythmical, sucking movements can be made in the fourth month. At this time swallowing movements are also functional and improve as gestation progresses.

The components essential for locomotion (righting, postural tonus and alternate synchronous limb movements) are all developed at birth, although, because of muscular weakness they may not be executed. All three are present well before term, presum-

ably a guard against premature birth.

Flexion of the fingers following tactile stimuli on the palm occur at 11 weeks; at twelve weeks, the same stimulus elicits flexion of the thumb also. However, sustained gripping does not occur until about 6 months development. In the early fetal period spontaneous dorsal flexion of the great toe has been seen. The Babinski phenomenon could be elicited in the third and fourth months, and cervical section of the cord did not alter the responses.

### Fetal Senses

From previous remarks it is obvious that relatively early in development sensory fibers are functional from cutaneous areas. Distinction between pain, pressure and temperature sensibility probably does not occur until late in fetal life. It is questionable whether proprioceptive fibers are functional as such in early fetal life, since the specialized nerve endings do not appear before three months. They probably are responsible, however, for many fetal movements in the latter half of pregnancy.

Taste and smell are developed though in the latter case, it may in late fetal life in humans, be the chemosensitive trigeminal fibers rather than olfactory fibers which are responsible. The distinction between sour, salt and bitter probably is not developed for some time after birth, although both late fetus and infant are sensitive to sweet stimuli.

Hearing is developed in late fetal life, but does not become in any sense acute until amniotic fluid has drained from the middle ear. Also pupillary responses have been observed in premature infants, indicating the capacity to differentiate between light and dark even while in utero where no light stimuli can be present.

This, and the preceding four articles on physiology of the fetus which have appeared in the *Log Book* (February to June, 1942) represent a brief, but it is hoped, adequate review of the subject as presented by Prof. W. F. Windle in his book "Physiology of the Fetus," (Saunders, Philadelphia). In justice to the author it should be stated that it is not a complete abstract, since attention was directed particularly to human development. The nature of the material and the variety of experimental animals used in the pertinent studies virtually necessitate the commission of some errors in these reviews. It is hoped that Prof. Windle's highly commendable summary volume has not suffered unduly at the hands of the present abstractor.

—Hugh Clark, Ph.D.

"This is a war not for conquest, popularity, or power. It is an aggressive campaign for love, truth and humanity. We love every man, woman and child of our race; so much so that we have enlisted and placed our lives in front of the enemy for their good." —Still.

# I. S. O. P. S.

## Additional Committee Appointments

President Golden has appointed J. O. Ewing, Bonaparte, Chairman of the Society's Committee on Maternal and Child Health and L. L. Facto, Des Moines, Chairman of the Council on Defense and Preparedness.

Dr. H. L. Gulden, Chairman of the Membership Committee, has appointed the following membership subchairmen: C. K. Risser, Maquoketa, District I; Clive R. Ayers, Grant, District II; J. O. Ewin, Bonaparte, District III; J. R. Forbes, Swea City, District IV; W. C. Gordon, Sioux City, District V; and B. H. Devine, Des Moines, District VI.

## Red Cross Instructors' Course

Forty-eight osteopathic physicians, from every section of the state, attended a three-day (thirty-hour) intensive Red Cross instructors' course on May 17, 18 and 19 at the Des Moines Still College of Osteopathy and Surgery. The course was sponsored by the Iowa Society under the leadership of Dr. Mary E. Golden. Speakers on the last day of the course were: Emerson G. Stephens, St. Louis, Mo., assistant director of first aid water safety and accident prevention, and Commodore W. E. Longfellow, assistant national Red Cross director Washington, D. C.

Local physicians who became instructors through a similar course conducted last February gave the course for the first two days. These instructors were: Paul Park, Paul Kimberly, John Q. A. Mattern, Hugh Clark, Beryl Freeman, R. C. Rodgers and Mary E. Golden.

Those who attended the three-day course are: Clive R. Ayers, Grant; W. R. Belden, Corona, New Mexico; John H. Broadston, Newton; Harry L. Cloyd, Blakesburg; L. L. Facto, Des Moines; D. C. Giehm, Sioux City; G. B. Groves, Waterloo; H. L. Gulden, Ames; J. A. Hirschman, Cherokee; R. W. Jack, Ogden; W. W. Jolley, Ottumwa; W. P. Kelsey, Des Moines; J. A. Kline, Malvern; R. R. Landry, Odebolt; J. R. McNeerney, West Des Moines; C. W. Millard, Lake Andes, South Dakota; W. F. Moore, Grafton; Theo. M. Tueckes, Davenport; C. R. Reynolds, Fairfield; G. A. Whetstine, Wilton Junction; Harry E. Wing, Ottumwa; C. E. Worster, Laurens; T. R. Griffith, Des Moines; J. H. Hansel, Ames; Rachel Woods, Des Moines; B. K. Bahnnson, Burt; Martin Biddison, Nevada; W. P. Chandler, Jr., Jefferson; T. S. Clark, Bradgate; Lillie M. Dunlop, Pocahontas; B. D. Elliott, Oskaloosa; F. M. GeMeiner, Stratford; W. C. Gordon, Sioux City; James E. Gray, Newton; Marvin E. Green, Storm Lake; Harold Jennings, Mason City; Lydia T. Jordan, Davenport; Nellie D. Kramer Pella; E. J. Luebbers, Des Moines; Fred A. Martin, Murray; Harold D. Meyer, Algona; Grace D.

Nazzarene, Dallas Center; H. M. Patterson, Mediapolis; K. B. Riggle, Des Moines; J. I. Royer, Woodward; T. J. Schloff, Palmer; B. E. Poundstone, Plover.

## Alternates to A. O. A. Convention

The following have been named alternates to the American Osteopathic Association Convention at Chicago, Illinois: 1. O. Edwin Owen, Des Moines; 2. G. A. Whetstine, Wilton Junction; 3. H. D. Wright, Hampton.

The House of Delegates of the A. O. A. will be called to order at 11:00 o'clock Saturday morning July 11, in the Stevens Hotel, Chicago.

## Department of Professional Affairs

J. K. Johnson, Jr., Vice President and Chairman of the Department of Professional Affairs, held a meeting of his Committee Chairmen at Jefferson on Sunday, June 14. Also in attendance were the membership subchairmen.

## J. K. Johnson, Jr., to Address Hernia Section

J. K. Johnson, Jr., of Jefferson, has been invited to address the Hernia Section of the A. O. A.'s forty-sixth annual convention. The invitation came from William H. Behringer, Jr., Allentown, Pa., program chairman of the Section.

## American Association of Osteopathic Examiners

D. E. Hannan, Perry, President of the American Association of Osteopathic Examiners, will preside at the meetings of that organization which will be held during the week of July 12 at the Stevens Hotel, Chicago.

## Iowa Board of Osteopathic Examiners

The Board of Trustees, in compliance with the By-Laws of the Society, has selected and submitted the names of the following physicians (listed in alphabetical order) for consideration by Governor Wilson in making his appointment to the Board of Osteopathic Examiners:

H. A. Graney, Des Moines; M. E. Green, Storm Lake; J. A. Kline, Malvern; J. W. Rinabarger, Keosauqua; James R. Shaffer, Mason City; and H. B. Wilard, Manchester.

## Personals

Lester McNichols, formerly of Carroll, has recently moved to Fremont where he is now engaged in practice.

R. C. Rogers, a recent graduate of Des Moines Still College, has opened an office in Hubbard.

Harry E. Wing, of Ottumwa, has been elected President of the Lions Club of that city.

## Membership Applications

John A. Link, Dubuque.  
Charles S. Randels, Des Moines.  
F. M. Crawford, Renwick  
R. W. Combs, Thompson  
H. M. Fredericks, Ankeny

—Dwight S. James

## Pursuit for a Reason

(Continued From Page 3)

tissues are quickly affected as in castogenic anemia—but we have no equipment that demonstrates the lesser changes in bone tissue until they progress to the degree of visible osteogenesis or osteoclasia. These changes in bone tissue result from long continued vasomotor and trophic disturbances but they are undetectable until their tissue effect is macroscopic. It must be remembered that arthritis is usually the result of long standing or chronic sprain of joint surfaces with or without a super-added general toxemia of variable amount.

Arthritic changes in areas of lesion do occur and they are related to the etiologic factors responsible for the lesion. The changes may appear predominantly as atrophic arthritis with adhesion formation, diminution in joint space, destruction of intra-articular tissues and true ankylosis.

The changes may appear as hypertrophic or extracapsular arthritis with no reduction in joint space, no ankylosis, but eburnation of the margins of the articulation with multiple exostosis and spur formation — with these exostoses eventually reduction motion range by impingement. There is local myositis, capsular thickening, fibrosis in each instance. Frequently there is a combination of these pathological changes in chronic lesions with the intra and extra capsular factors developing simultaneously in the articular region.

In the column of the pillars there are similar changes due to the nutritional defect due to aberration. After years of a lesion similar changes occur in the bodies and discs. There develops lipping and spur formation around the margin of the bodies, occasionally calcification of the ligaments anterior and posterior, and a progressive characteristic transition in the discs. If the lesion has been one in which the articulation have been held at the extremity of the range of motion — or if there has been a group lesion as in an upper or mid dorsal kyphosis then it is found that the altered weight bearing factors produces a greater involvement of a part of the body with thinning of the bone and disc. Only occasionally is this thinning great enough to obliterate the disc in an area with resultant bone to bone contact and subsequent calcification and ankylosis.

Occasionally a local osteoclastic change develops due to the years of nutritional disturbance and the bone is definitely devitalized to the point that lesion correction becomes a problem. This is particularly true in elderly individuals who have carried a lesion for twenty-five to thirty years or more, but it is not limited to the upper age brackets.

We can readily see that the long period of time usually consumed in the development of these bone defects that the gross response of the bone to the le-

sion correction will be similarly extended. Correction of such a lesion might result in an immediate complete alleviation of symptoms and progressive improvement take place — but we still would not observe alteration in the shape of the bone for several years at least.

Doubtlessly many of the acute flare-ups following the first vigorous treatment, that incapacitates the patient, with acute inflammation and pain for a period of four to ten days is due to the breaking off of spurs and lippings, rupture of adhesions and labrosities. If motion is maintained the inflammation subsides and the range of motion and the patient is improved. If we do not retain the motion established by the manipulation and permit the chronic joint to rest until it is free of pain and inflammation then it is quite likely true that adhesions have reformed in greater number than previously existed. Hence the advent of the rule, "Never manipulate a chronic joint unless the motion can be maintained by repeated application of mild forces until the inflammation subsides." These factors of course will be up for consideration only when in the occasional instance that we find great fibrosis and atrophy of the soft tissues, and a history of long standing lesion existence.

## 2. Ligament and disc.

Lesion pathology affecting the ligaments and the intervertebral disc occurs constantly in any lesion area. The histologic changes requires a longer period than necessary for the myositic and neuritic changes but not nearly so long as those of bone. After several months there is observable an edema of tissue and a progressive proliferation of fibrous connective tissue. Yellow elastic tissue is rapidly replaced by white fibres, reducing the resiliency and the range of motion. There is ligamentous thickening and shortening due to the contraction of this fibrous tissue. If the ligament or portion of the disc is under great stretch it is then thinned, atrophied and further fibrous changes result. Some occupations, postures, etc. — will stretch a thin ligament and muscle also to the point that a range of motion greater than normal develops. Usually the chronic trauma and chronic nutritional changes results in reduction in motion and function of the joint and the ligaments are shorter, thicker and firmer.

The disc changes in the lesion area are particularly important and interesting. Much research has been accomplished pertinent to the disc so that nothing is left to be inferred from our pathology text. The disc will be considered in the next issue.

—Byron E. Laycock.

## Address Changes

Every month we receive returned copies due to a change in address.

We would appreciate notice of any change in order that you may receive your copy of The Log Book without delay.



Entered as second class matter, February 3rd, 1923, at the post office at Des Moines, Iowa, under the act of August 24th, 1912.

# THE LOG BOOK

Accepted for mailing at special rates of postage provided for in Section 1103, Act of Oct. 3rd, 1917, authorized Feb. 3rd, 1923.

PUBLISHED MONTHLY BY THE DES MOINES STILL COLLEGE OF OSTEOPATHY

Volume 20

JULY 15, 1942

NUMBER 7

## Many Faculty Members to Attend National Convention

The Still College representation at the National Osteopathic Convention in Chicago, from July 12-17, is a large one. As you read this the following faculty members and officials of the school will be enjoying the fellowship there.

Dr. John P. Schwartz  
Dr. Lonnie L. Facto  
Dr. O. Edwin Owen  
Mrs. K. M. Robinson  
Dr. Paul E. Kimberly  
Dr. Robert B. Bachman  
Dr. Mary E. Golden

## BOOK REVIEW

### The Lengthening Shadow of Dr. Andrew Taylor Still

By Arthur Grant Hildreth, D.O.

Truly a remarkable man was the "Old Doctor." All who knew him loved him, admired and respected him, and entertained a degree of awe for him. As well they might, for here was a man who seeing the glaring inconsistencies and inadequacy of allopathic therapy as practiced in his day was not content to sigh out a wish there were some way he could better serve suffering humanity. No, instead he renounced the allopathic theory and thought carefully, reasoned intelligently and arrived at the conclusion that today we call the Osteopathic Principle. It is a truth that is supremely logical and is soundly based in cold biological fact, but when Dr. Still discovered and applied it it had been lying dormant since the first amoeba stirred itself to split and form two lives. Today even the allopaths must accept its truth—though continuing to ignore the application of it to a large extent. There is no hard and fast definition of the Osteopathic Principle. Dr. Still was interested in it not for itself but for its application to the curing of the ill. So there is no carefully drawn up, high sounding statement known as "Still's Law." But briefly stated the principle is that sound and normal structure implies sound

(Continued on Page 2)

## The New Semester

The summer semester of college work is well on its way. We are now experiencing educational regulations necessitated by a nation at war.

The experience of a continuous curriculum has not proven to be an unpleasant experience. The immediate response of our faculty and student body in complete cooperation to meet a war-time necessity has been most gratifying. The spirit shown by both of these groups could only be inspired by a desire to do their part in furthering the "all out" war effort.

We are particularly pleased to note that each student apparently appreciates the responsibility placed upon him by occupational deferment and is demonstrating this charge by diligent application to his college work.

I believe too, that our alumni have an added responsibility at this time, namely—student recruiting. All of our Osteopathic institutions will be pressed by a reduction in student enrollment. This will necessitate extra effort in interesting prospective students and getting them registered in our Colleges. We ask and expect your cooperation.

J. P. Schwartz, Pres.

## Prominent Alumnus Dies

Dr. D. H. Wire died June 24, at Corydon, Iowa, at the age of 38. Born in Columbus, Montana, in 1903, he attended the Des Moines Still College of Osteopathy where he was a member of the Atlas Club. He graduated with the May class of 1930 and from 1932 has practiced at Corydon. Here he was for many years the city health physician; a member of the Masonic lodge, a well loved citizen, and a successful doctor.

In 1941 Dr. Wire discovered he was suffering from a fatal form of renal disfunction but despite being confined to his home he faced his plight with courage.

As a fitting tribute to his place in the regard and affection of the people of Corydon all the business houses on the town square were closed during Dr. Wire's funeral services on June 26.

Both the school and the Atlas Club extend the most sincere sympathy to Dr. Wire's family at the passing of this worthy alumnus.

## BULLETIN To the Freshmen

You have no doubt experienced some evidences of the avid interest the fraternities have in you. But during the sixth week of this semester comes your real chance to get acquainted with the organizations represented here at Still College. That is the week of Fraternity Smokers and you are all welcome at each of these. In fact if you expect to pledge a fraternity this semester, which we hope you do, you must be present at all the smokers according to the ruling of the Interfraternity Council.

So put your bookmarks in your texts of Anatomy, Histology, et al and come out to meet the fraternities. There will be interesting programs of entertainment, refreshments and free smokes. We think you'll enjoy a brief respite from trying to balance yourselves "on the ball." So let the ball roll on the following nights and relax with the frats.

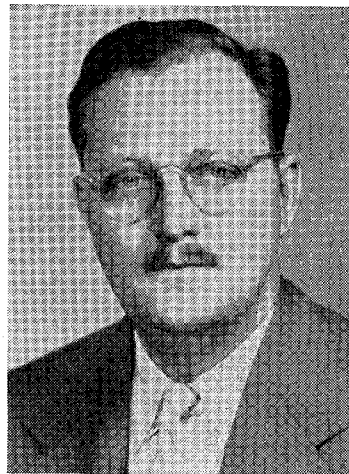
Monday, July 20—Atlas Club  
Wednesday, July 22—Iota Tau Sigma

Friday, July 24 — Phi Sigma Gamma

## Pursuit for a Reason

The intervertebral disc is the important part of the column of the bodies of the vertebrae. Its function is diverse and without it an incomprehensibly intricate display of musculature would be necessary to permit the same physiology that the Vertebrata enjoy. Even then it would probably not permit the assumption of the erect position except for brief periods of time and the dexterity of the human hand would never have developed because of the constant requirements of weight bearing and ambulation.

The discs constitute 25% of



Byron E. Laycock

the movable spine, 20% of the entire spine, become thinned with disease or trauma and are directly proportionate to the mobility of the spine. Biologically it is true that function determines structure, but in a given individual or race at a given time—structure dictates the degree of function.

Anatomically considered the disc is an interposed fibrocartilage.

(Continued on Page 3)

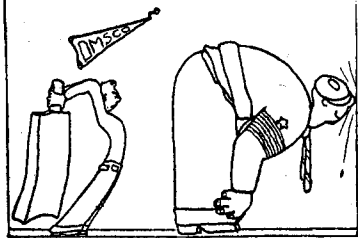
## Births

Word has been received of the birth of a baby boy at the Dr. and Mrs. H. F. Heideman home. The new arrival weighing 7 lbs., 13 oz., has been named Thomas Henry.

Dr. and Mrs. Lyle L. Ackerson are the proud parents of a baby boy, born June 28, 1942.

# NEXT CLASS ENTERS OCT. 17, 1942

## FRATERNITY NOTES



### ITS

With the coming of the new summer semester, all of the fellows have returned with the exceptions of Drs. Lilly and Geraghty, lost through graduation.

At our regular business meeting on Thursday, June 25, 1942, the annual election of officers was held at the Taylor Clinic. Those elected were; president, Frank J. Nasso; vice president, Bert R. Adams; secretary and corresponding secretary, Thomas McWilliams; treasurer, Charles Schultz; great historian, John Halley; sergeant-at-arms, Jack Shafer; pledge master, Robert Hatchitt.

We're glad to welcome these new officers and men back and may the coming year be as highly successful as the preceding one.

Some of the brothers and alumni will be attending the A.O.A. Convention in Chicago. Greetings to them and may their visit be highly an educational one.

Congratulations to Pledge Major Anderson on being the proud papa of a baby girl.

Keep 'em flying!!

—F. J. N.

### ΣΣΦ

Sigma Sigma Phi held its election of officers for the coming year at our last meeting. Gordon Elliott was elected to the office of president. A short time after this honor was bestowed upon Gordon, he was called to enter the armed forces of his mother country, Canada. We are very sorry to lose Brother Elliott but we were assured by him, that he will return at his first opportunity. The vacancy was filled by Brother Glen Deer who will act in the capacity of president for the coming year. The remaining officers are:

Vice president, De Lauriers; secretary, Westfall; corresponding secretary, Hatchitt; treasurer, Bennington; Sergeant-at-arms, Gaudet.

Sigma Sigma Phi is planning a number of entertaining meetings for the coming summer months. A picnic, steak fry, swimming party and several such activities have been discussed and will be decided upon at our next meeting.

Invitations to prospective new members will be sent out in the near future.

## ATLAS CLUB

The beginning of the College's first try at a summer session found, in keeping with the times, the Atlas Club with a few changes made. Most notable, perhaps, was the absence of Brother Gordon Elliott of Toronto, Ontario, Canada. Brother Elliott was called back to his home to answer the call of his country in their war effort. Elliott, who was Noble Skull of the fraternity, has passed the requirements and is accepted in the technical division of the Royal Canadian Air Force. Though his absence is conspicuous, we admire him and congratulate him in his new effort.

Brother Ronald Woods, of Des Moines, was recently elected to fill the vacancy left by Brother Elliott. "Ronnie", who practically inherited an interest in Atlas, has been outstandingly active in his some three years of membership. It is generally agreed that he will make a competent and reliable leader.

Local Brothers of Atlas and students were pleasantly surprised a few days ago when Virg Halladay, former head anatomy professor at the school and now a physician in New Mexico, specializing in orthopedics, stuck his ruddy complexion and broad grin around one of our corners and said, "Hi". "Virg" has been a godfather and active "plugger" for the local chapter for many years. While attending to some business here, he stayed at the house and many happy hours of "bull session" were spent with the boys and old acquaintances. Dr. Halladay is opening a new office in Albuquerque, New Mexico, at East Central and Mesa, and he has reported encouraging results even before he could officially open the doors of his office.

Recent activities of the local chapter include a Practical Work Night with Dr. John Woods, fraternity brother and local physician, as the guest speaker. His topic was "Hash", or Emergencies, as he proceeded to interestingly enumerate and demonstrate the mixed-up ingredients of the "unexpected" in a general practice. On Friday, July 17, the Brothers with their wives and (or) sweethearts will gather in the evening at the house for a picnic lunch in coordination with a general house-cleaning and a good time.

The Atlas Club extends the most hearty welcome to the new Freshmen. We were glad to have you at our last Practical Work night, and are looking forward to seeing you again at the smoker on July 20.

—G. A. D.

**Buy**  
**War Savings Bonds**  
**And Stamps**

## ΦΣΓ

At the last regular meeting of Delta Chapter of Phi Sigma Gamma, the fraternity launched a new plan for a summer social season. Under the direction of a committee composed of Brothers Clausing, Crane, Crotty and Harris we all intend to beat the heat through the medium of picnics, swimming parties and informal summer dances.

A genuine fraternity spirit has been shown during the past two Saturdays in an effort to prepare the house for summer. One of the disadvantages of having a fraternity house is that it must be thoroughly cleaned occasionally but far above this disadvantage is the satisfaction of having a well-kept house through the cooperative effort of all the members.

All the members are looking forward to the smoker-session with the new Freshmen. The social committee has begun to work on the entertainment and from the first report it should prove most interesting.

A formal initiation will be held Sunday, July 26, at the Chapter House.

At the last meeting Brother Herb Clausing was elected House Manager for the ensuing year, and Brother Dave Heflin was elected treasurer to replace Brother Doug Frantz.

—H. G. H.

## O.M.C.C.

The Osteopathic Women's College Club met July 7 at the Taylor Clinic. The speaker of the evening was Mrs. Sam Kuramoto and her subject, "Flower Arrangement." Mrs. Kuramoto is an authority on this, having studied under prominent men in the field in Los Angeles, so her talk was most interesting.

The Club will hold a picnic Sunday, July 19, at Avon Lake with Mrs. Laycock as host at her home there. Husbands are invited.

—P. H. S.

## Births

Word has been received of the birth of a son to Dr. and Mrs. William S. Aspengren, June 13, 1942.

The name of the child is the same as the father's. Mother and baby are getting along fine.

Mr. and Mrs. Major Anderson are now the parents of a baby girl, born July 8. We are told the baby's name will be Carol Ann but her father could be wrong! Major is now a Junior at Still College.

## BOOK REVIEW

(Continued from Page 1)

and normal function; and that all human ills may be traced back to some structural pathology, gross or microscopic. Having arrived at this conclusion Dr. Still proceeded to search out the basic causes of various ills and devise some means to correct them. He found many, and devised many wonderful corrective measures; more are being developed by the osteopathic profession continually, and it was Dr. Still's firm belief that in "all the ills that man is heir to," an underlying structural pathology is present, the correction of which will remove the manifestations of it that we call disease. We realize that there are certain conditions in which the structural pathology is so minute in nature as to defy present day means of detecting it, but who can deny that it exists merely because his perception is not acute enough to find it?

In this book, written in a style that is simple yet beautiful in its sincerity, Dr. Hildreth describes the working of the Old Doctor's mind towards his goal and the trials through whose fires both Dr. Still and osteopathy passed to emerge as a great man and a wonderful system of healing. Arthur Hildreth's love for the Old Doctor and his supreme faith in osteopathy give the book a warm and personal flavor. His relation of anecdotes about Dr. Still and the early days of the profession are fascinating; the case histories along with the methods used in treatment are illustrations of how osteopathy succeeds where all other healing systems have failed. Dr. Hildreth is an osteopath of the old school, the "ten-fingered" school, and the reader of his book cannot fail to lay it aside with an increased respect for osteopathy, a greater faith in its possibilities and an inspired determination not to make any compromise with other healing systems.

Throughout the book Dr. Hildreth emphasizes that our profession has had a continual struggle for its rights with the majority school of medicine—the allopaths. Realize this fact and remember the biological fact that only the fittest survive and you cannot help but be impressed with the progress made by osteopathy since it was formally introduced in 1874 when Dr. Still opened the doors to the first class in the first school for the teaching of the profession. This was the "American School of Osteopathy" at Kirksville, now the "Kirksville College of Osteopathy and Surgery." The survival of osteopathy and its phenomenal growth, its present popularity with people who have experienced its benefits and the nation-wide recognition by state laws that it enjoys prove that it is indeed one of the fit.

Never have the allopaths extended the "helping hand of

(Continued on Page 3)

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Lester Raub, B. S.

Advisor.....J. P. Schwartz

Osteopathy Without Limitation

## Tribute

Since last fall Mr. Richard Snyder has been editing this paper as all whom he has hounded for articles know. Dick has done a fine job and deserves the warmest congratulations for his good work. He has given up being an editor now to go into business on his own—a story for Horatio Alger, Jr. We all hope the local boy makes good with his present charge, the Still College Book Store. As a plug for Dick and as advice for the new Freshmen — may they all graduate—buy new books and keep them, a good library in the office will inspire confidence in future patients. Also you can't keep all that stuff in your heads, it's a good idea to have it where you can look it up!

The present editor wishes to thank Dick for his valuable assistance in showing him the ropes of the job, and hopes to maintain the high quality of Dick's work. Without our retired editor's aid there just wouldn't have been a Log Book this month—which I know you would all regret!

—L. R.

## BOOK REVIEW

(Continued from Page 2)

friendship," to quote Dr. Hildreth, to the osteopaths. Our way has been made despite their earnest and bitter opposition. Dr. Hildreth tells that this has been a benefit in disguise for it has not only kept the profession from being swallowed up by a merging with the allopaths, but has helped secure public recognition and sympathy. People, says Dr. Hildreth, are inherently fair and just, and they hate to see a worthy cause beaten down by such a bullying, monopolistic group as the A.M.A. has tried to become with no little success. Results are what count with people who are sick, and the superior results shown by osteopathy have convinced the people that it is a worthy cause. Instances are cited in this book where allopaths have legally attempted to prevent osteopaths from practicing, in the early days of the profession, and the doctor's patients have petitioned for permission for him to continue practicing. Dr. Hildreth was instrumental in helping secure state recognition of osteopathy. Putting his private matters aside he travelled to state legislatures far and wide. He would treat the legislators free of charge and by his amazing results secure them

as disciples of his profession. In no small measure we owe our present nation-wide, state recognition to the efforts of this pioneer who was a member of Dr. Still's first class, who served on the faculty of the Kirksville school for many years, who was a member of the Missouri state legislature for several terms, a president of the A.O.A. and who helped establish the Still-Hildreth Osteopathic Sanatorium, where before unprecedented results in curing insanity have been secured. He was the president of the sanatorium for many years, and in addition to all his other services was a loyal and loving friend to Dr. Still and his sons. A profession which can boast of men like Dr. Hildreth and of a progenitor like Dr. Still is surely one well-blessed.

A point discussed in this book is the necessity for maintaining separate Osteopathic State Board Examinations. In the states where a Composite Board exists there is perhaps one osteopathic physician on the examining board with six or seven allopaths. Naturally the questions asked on the exams will be taken from an allopathic point of view. This makes it necessary for the osteopathic colleges to teach from a more or less allopathic point of view in order that their graduates may be able to pass the board exams and to secure a license to practice. Statistics are quoted to show that in states where the Composite Board exists the percentage of osteopaths licensed to practice has fallen off greatly in comparison to the number licensed in the same state when the previous separate Osteopathic Board was in existence. Independent Osteopathic Boards fail as large a percentage of their students as the Medical Boards do M.D. students, but in the Composite Board set-ups a much larger percentage of osteopathic than of M.D. students fail to pass. This proves, I think, that the two types of board exams are equally hard but of a different nature, and that when an osteopathic student is forced to compete in the tests of a Composite Board, whose questions are predominantly allopathic in approach—he has a much greater chance of failing. Basic Science tests as established in many states are merely, according to Dr. Hildreth, another chance for the allopaths to take a crack at the osteopathic student even before he graduates. Both the Composite Board and the Basic Science Tests, says Dr. Hildreth, are thinly disguised attempts by the allopaths to either prevent the licensing of osteopaths or to force our schools to teach allopathic subjects, to the detriment of our own, and thus to engulf osteopathy into the monopolistic maw of allopathy. So it is imperative for every practicing osteopathic physician to join the A.O.A. which is our instrument for combatting the designs of the M.D.s and to fight vigorously himself for the continuance or establishment of separate boards and the abolition of existing Basic Science Tests, as well as the prevention of

establishment of more of them.

Dr. Still originated what is proving to be the greatest development in the field of therapeutics that the world has ever known. It was the child of his keen intellect and was nurtured by his unflagging zeal, by his absolute faith in his conviction that his principles were right and by the men and women of high ability that Dr. Still's wonderful logic persuaded. Unlike many great men he did not have to wait for death to bring him recognition. When he died in 1917, at the age of 89, he had seen osteopathy become an honored and successful method of healing, he had watched the establishment of its fine colleges, he had aided in the opening of the Still-Hildreth Osteopathic Sanatorium and seen the wonderful record of cures there made. His brain-child had grown to man's estate and though its trials were still many it had developed strength to combat them. Dr. Still himself was a man greatly honored and loved by all who knew him, and he died in every way a truly happy and successful man. To quote Dr. John R. Kirk who beautifully expresses the epitaph to a beautiful life:

"To the curbstone lad we said, 'What is it?' He said, 'My kite.' We said, 'Where?' He said, 'Up there in that cloud.' We said, 'No.' He said, 'Take the string and feel it pull.' To us a thread of life is snapped, and yet we feel it pull. The frail form in simple garb is at rest. The widening work goes on. In it the man yet lives and is and will be of the everlasting in all the ages."\*

Truly osteopathy is the lengthening shadow of this wonderful man, Dr. Still, the Old Doctor.

Reading this book should be a graduation requirement in all osteopathic schools—sure it would be the most pleasant requirement of the curriculum and one which would do as much to make each graduate a good osteopath as any course in the school.

—Lester Raub.

\*Hildreth, *The Lengthening Shadow of Dr. Andrew Taylor Still*, page 298.

## Pursuit for a Reason

(Continued from Page 1)

tilage, developing in the interval between each of the movable bodies. It consists of varying amounts of yellow elastic, and white fibrous connective tissue and of a thick, mucoid, gelatinous substance. The disc is formed by three structures:

1. Cartilaginous Plates (two).
2. Annulus Fibrosis.
3. Nucleus Pulposus.

1. Cartilaginous plates mark the cephalic and caudal limits of the disc. The plates are thin, perforated by eighteen or twenty holes and are attached to the body of the vertebra immediately above or below according to whether the plate in question is on the cephalic or caudal surface of the intervertebral disc considered. This attachment is only at the circumference, to the cortical bone of the body of the vertebra—the large approximating surfaces of the vertebra being spongy bone with no cortex. Blood vessels, from the body of the vertebra and eventually from the artery to the body of the vertebra, penetrate the apertures in the plates during uterine life and the early post-birth years. As soon as weight bearing is assumed, however, these arteries are rapidly and completely obliterated. From early life on then, the disc draws its nutrition from the body of the vertebra and its artery only by osmosis. Two factors are of the utmost importance, obviously, first the normalcy of the vaso-motor control to the artery of the body of the vertebra, and second the rhythmicity of motion so important to lymphatic return and osmosis. 2. Annulus Fibrosis or annulus lamellosus is a restraining factor to the nucleus pulposus. The annulus is not present (Ubermuth) at birth or before, but develops to the degree of detection in the first several months of life. As soon as six months, when the spine has already been used as a supporting structure, the annulus

(Continued on Page 4)

## Still Students with the Armed Forces

Despite the recommendation of the National Selective Service authorities that Osteopathic students be deferred, certain Local Boards, acting within their power and for reasons they considered good, have seen fit to call some of our boys to the Army rather than leaving them in school to fight on the home front. Others of our students, realizing they would be called, have preferred to enlist. We are all interested in the welfare and progress of these Still College men and so it will be the policy of *The Log Book* to keep its readers posted on the whereabouts of our former students and graduates who are thus serving their country. We know you are interested in them and that

they will be glad to hear from you readers how things are going here in school, with practicing members of the profession and with any other of their friends who may see this.

Any information you can give concerning our men who have joined one branch or another of the armed forces will be greatly appreciated and an effort will be made to publish it. Here follows the addresses which are available at present.

Lieutenant Joseph P. Gurka  
3rd En. Hq., 18th Infantry, A.P.O.  
No. 1  
c/o Postmaster, New York, N. Y.  
Gordon Elliott  
349 Quebec Avenue  
Toronto, Ontario, Canada.

# I. S. O. P. S.

## President Golden to Speak Station WCLF, Chicago

Mary E. Golden, President of the Iowa Society of Osteopathic Physicians and Surgeons, and Arvilla McCall, Evanston, Illinois, President of the Osteopathic Women's National Association, spoke at radio station WCLF, Chicago, Saturday, July 11, at 5:15 p. m., on the subject "Female Fitness for War Work."

## Vice President Johnson Receives Important Committee Appointment

J. K. Johnson, Jr., Vice President and Chairman of the Department of Professional Affairs of the Society, recently received notice of his appointment as a member of the Committee on Constitution and By-Laws for the A.O.A. convention at Chicago, Illinois.

## Dr. Gowans Enlists in Navy

Charles F. Gowans, Marion, recently enlisted in the U. S. Navy and was sworn in at Des Moines on July 1, as a pharmacist's mate, second class. He had practiced in Marion for the last six years.

## Membership Campaign Started

On June 16, Dr. Gulden, Chairman of the Membership Committee, started this year's membership campaign. His subchairmen have selected membership teams for the purpose of contacting all delinquents and nonmembers in the State. Work is progressing satisfactorily.

## Clipping Bureau Service

Pursuant to authorization and direction of the House of Delegates, the Society has contracted with a clipping bureau service for receipt of all news stories appearing in the Iowa press pertaining to the osteopathic profession and its physicians.

## Public Education

H. D. Meyer, Algona, Chairman of the Society's Public Education Committee, is making plans for an extensive and comprehensive program of public education during the present fiscal year.

## Membership Applications

E. C. Skinner, Sutherland.  
G. I. Noe, Sheldon.

—Dwight S. James, Sec.-Treas.

## Address Changes

Every month we receive returned copies due to a change in address.

We would appreciate notice of any change in order that you may receive your copy of The Log Book without delay.

## Pursuit for a Reason

(Continued from Page 3)

grows and continues to increase in size or proportion with the addition of years and use. The greater the use the greater the development of the annulus. The connective tissue of which the annulus is formed invests the nucleus in laminations similar to those of the onion—but at the outer margin of the disc the fibers of the annulus laminations are variously interwoven. For here the lines of force to be resisted come from all directions. There are no blood vessels in the annulus but there are lymph spaces and channels. The annulus increases in size at the expense of the cartilaginous plates, the nucleus pulposus and the motion factor, all three being reduced proportionately. The annulus is attached at its periphery to the cartilaginous plates, and to the edge of the body of the vertebra above and the one below, and to the anterior and posterior longitudinal ligaments of the spine. 3. Nucleus pulposus is the central portion of the disc. It is filled with a highly gelatinous substance held under pressure. When the disc is cut in half the nucleus bulges forth due to the release of the restraining pressure. For all practical purposes the nucleus is a synovial cavity of a diarthrodial joint. In the infant the nucleus pulposus utilizes more than half of the intervertebral space. The older the individual becomes and the more disturbance to the local nutrition the smaller becomes the nucleus and the greater the annulus. The cavity in the infant is fitted with infolding marginal villi that secrete the gelatinous substance so characteristic of the nucleus. The nucleus is the remnant of the embryological notochord.

There is a gradual change in the nucleus as it ages. It becomes smaller, narrower, shrinks with the appearance of horizontal fissures, the boundary becomes poorly defined and then lost in the fibrous, cartilaginous annulus.

The physiological function of the disc is of great importance and complexity. It is like the cement between bricks, keeping them apart and holding them together at the same time. The disc in function permits a fluidity of motion that could hardly be obtained in any other way. Normally the disc permits a great freedom of motion but offers increasing resistance the further that motion is carried in a given direction. This resistance is the result of increased positive pressure in the nucleus against the annulus fibrosis and the restriction offered by the interwoven fibers of the annulus at its periphery. When the voluntary motion is arrested finally by the annulus the increased pressure of the nucleus offers a continuous

force against the annulus that can and does return the bodies to a neutral position without muscle effort. A neutral position is defined as one of rest, when the vertebral bodies are in the position of rest. Without this hydraulic force always pushing the bodies apart and pulling them together to maintain a neutral position it requires but little imagination to visualize the tremendous array of segmental, prevertebral musculature that would be necessary to guard the column of the bodies against motion in all directions and to realign each segment after every voluntary action. The startling absence of prevertebral musculature is evidence of the efficiency of the normal disc. For instance in flexion there is a compression of the disc and nucleus ventrally and a stretching of the annulus posteriorly. The pressure on the nucleus ventrally pushes it backward against the stretching fibers of the annulus. Both these factors resist further flexion. The increased pressure of the fluid nucleus against the stretched fibers of the annulus tends to force the nucleus back anteriorly, pushing the bodies apart from flexion toward the neutral position. The reverse is true in extension, and the same principle is effective in lateral flexion with rotation.

Direct compression of the disc, as in weight bearing is resisted by the compression directly on the nucleus forcing it in all directions against the annulus and flattening it. The pressure of the nucleus is increased against the annulus around its circumference causing it to bulge. Rhythmical compression and separation of the bodies with regard to the disc does not diminish its thickness, but static compression as in standing all day does make the disc thinner. We can be as much as a half inch shorter after a day of standing than we were in the morning. The older we get the less this daily shortening and lengthening process is evident, for from forty years onward we become shorter due to thinning of the discs. Not infrequently folks seventy to ninety years of age are two to three inches shorter than they were at thirty. The difference is, of course, in the disc, and the decrease in motion in the spine is proportionate to the decrease in the thickness of the disc.

The reverse of this process is not true. Efforts have been made by exercise and by contractions that stretch the spine to increase the height of people. The effect when produced is very transitory and the disc thickness rapidly returns to what is normal for that person.

Disc changes progress in a fairly characteristic way unless accelerated by trauma, inflammation, or nutritional disturbances. As the average the appearance is as follows.

First decade. The disc is highly elastic and easily compressible. The annulus is clear, with the nucleus clearly defined from it.

Second decade. The disc is highly elastic and compressible. The annulus fibers are coarse,

and fibers have developed at the margins of the nucleus.

Third decade. The annulus is the same but the nucleus is less clearly defined from the annulus and is fibrous, white instead of clear and is more dense.

Fourth decade. In this decade pathological variations become increasingly more common. The annulus is considerably more fibrous and coarse, showing an already established diminution of spinal motion. The nucleus is also more fibrous and is decreased in size.

Fifth decade. Now the disc is flattened, horizontal ridging is definite, nuclear margins are nearly indistinguishable, the annulus is more fibrous and the motion factor is obviously greatly reduced. It is common to find pathological acceleration of the trend to fibrosis.

Sixth decade. In it is further accentuation of the fibrous changes expressed earlier. Pathological local changes are severe and motion is greatly reduced.

These changes develop according to this plan over the years with a fair degree of constancy. Sometimes spines are found with the disc changes usually found at sixty present at thirty or forty. Far more frequently there will be one or more of the twenty-three discs that will be similar to the sixty or seventy year old discs present in a spine thirty years old or younger. Beadle and Schmorl were greatly concerned with this fact and with its etiology. Their pursuit for a reason would not have had to extend very far to find the Osteopathic Lesion one frequent factor potent enough to produce the disc changes in one or all of at least three different ways. 1. Vasomotor disturbances to the artery to the body of the vertebra. 2. Trophic or nutritional change. 3. Impairment of the lymphatic return by reduction of the essential motion factor.

Another group is the eighty or ninety year old folks with discs that are identical to those of individuals thirty or forty years younger. It is likely true that the suppleness of their spinal columns contributes to their long life. There is more than idiomatic truth in the statement, "One is as old as one's spine." We may well say that we are as old as our intervertebral discs, except for the fact that the other segmentally related tissues run a parallel in the proportion of fibrous tissue to parenchymatous. Nodes of Schmorl are buddings of the nucleus that perforate the annulus and plate and project into the soft body of the vertebra. These herniations have received much attention in recent years.

The intimate relation of the discs to motion is vital to the segmental anatomy and to the Osteopathic Physician attempting to normalize segmental mobility. The disc is one dominant reason why each manipulative treatment should be concluded with at least a few minutes of passive motion and the carrying of the articulations through their complete range of motion several times.

—Byron E. Laycock.



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# THE LOG BOOK

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Volume 20

AUGUST 15, 1942

NUMBER 8

## Still Students With the Armed Forces



Here are the addresses of more of our fellows serving with the U. S. forces. We hope you have some spare time to drop them a line.

Pvt. Gustaf Peterson  
858th Chemical Co. A. B.  
Davis Montham Field  
Tuscon, Arizona.

Patrick Lombari, P.H.M. 3-C.  
U. S. Naval Hospital (Medical Storeroom)  
San Diego, Calif.

Jack Yarham  
U. S. N. T. S.  
Camp Kidd,  
San Diego, Calif.

Larry M. Belden  
Co. B, 103rd Med. Tr. Bn.,  
1st Platoon  
Camp Robinson, Ark.

## Pursuit for a Reason

Muscle tissue is the next substance we must investigate in our pursuit for the reason for the lesion effect and maintaining factors.

Muscle pathology has been described up to the 24-48 hour interval following the onset of myositis. It is important that we visualize that Osteopathic Lesion pathology locally is identical with the tissue changes present in any joint sprain or soft tissue strain, and that the muscle pathology is identical with any myositis. There is nothing unique or original in the local pathology of the lesion. A visualization of the effect of that inflammation is 50% of the so-called Osteopathic concept. Every inflammation however slight has an effect locally, reflexly and generally and there is no doubt of that, but it is the scientific myopia of other schools of practice in not visualizing that fact that makes a great distinction for Osteopathy. Sooner or later all schools of practice will necessarily arrive at the recognition of this physiologic reasoning. The sooner the better, for their patients anyway.

Observation of the varying degree of muscle pathology will

(Continued on Page 3)

## Minutes of the Annual Meeting of Des Moines Still College Association

Held at Hotel Stevens,  
Chicago, Illinois, July 15, 1942

Meeting was called to order by President, Dr. Frank Jones, with approximately 100 alumni present. Dr. Jones made a very inspiring address, especially stressing the opportunity for Osteopathy today, the need for organized alumni activity, and the close cooperation between the schools and the profession.

Minutes of the last annual meeting were read and approved as read.

President Jones called upon the Student Recruiting Councilor's report. No report made.

He then asked for the report of the Endowment Councilor's report. Dr. Rogers stated there had been no activities from his department during the year, but did give an address on the need of endowment, especially stressing the fact that graduates of a school owed a part of their income each year to their alma mater, and that under present conditions it would be difficult to raise money from individuals outside the profession. Because of this fact, he recommended that a campaign be instituted whereby each alumnus would be solicited for funds, preferably a small monthly donation. His report was accepted and placed on file.

President then called for the Secretary's report which was read and approved as read, as were the recommendations which were part of the report.

Treasurer's report was then read and accepted.

A report was then made by Dr. Mary Golden on the progress which had been made toward the purchase of lots upon which to build a clinical hospital.

A report of the Foundation Committee which included the articles of incorporation and the names of the persons to be included in the original corporation as well as on the Board of Trustees, was read and accepted. This report showed that Mr. J. Newlin of Des Moines was president; Mr. Nelse Hansen of Des Moines was Vice-President; Dr. Ruth Paul, Des Moines, Secretary; Dr. J. P. Schwartz and Dr. Paul Park were the other two members of the Board of Trustees.

Mrs. K. M. Robinson, Secretary of Des Moines Still College, was introduced and given a warm reception.

Dr. A. D. Becker was introduced and gave a report of the activities of the Des Moines Still College during the past year as well as a very fine address on student recruiting and the need for it in all our schools.

Dr. J. P. Schwartz, President of Des Moines Still College, was then introduced and given a very fine reception after which he introduced the following members of the Des Moines Still College faculty:

Dr. O. E. Owen	Dr. Paul Kimberly
Dr. Mary Golden	Dr. L. L. Facto

Dr. Schwartz then reported on the college attitude in regard to the work of the Dr. Swope committee on legislature and selective service informing those present that the college gave this committee its complete support. He also gave his opinions on how the war will effect our various educational institutions, calling attention to the fact that our college went through World War I, and it would be necessary to practice the strictest economy.

The election of officers was then held with the following results:

President—Dr. P. L. Park  
Vice-President—Jack Voss, Albert Lea, Minnesota  
Executive Secretary and Treasurer—Lloyd Woofenden, Hiland Park, Mich.

Student Recruiting Councilor—John E. Rogers, Oshkosh, Wisc.  
Endowment Councilor—Walter Goodfellow, Los Angeles, Calif.

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## Bacteriology and Medicine

All good Americans take pride in the thesis that "all men are created equal," but many shudder at the thought of extending the maxim beyond human society. Yet it is an obvious truth that all living organisms are created equal and have the same right to life, liberty and the pursuit of happiness . . . in whatever way these objectives may be attained. Regardless of what a human's opinion might be, such is the deep-seated conviction of every bit of protoplasm. Each organism is not only willing in, but so constituted that it cannot avoid, defense of this vital prerogative; for life is, indeed, a state of dynamic equilibrium between internal and external forces, not least of which are biological forces, i. e., competition by other forms of life. This is the basis for the constant struggle for existence by living things.

Competition exists not only between individuals of the same species, but also between different species whose constitution preordains that they must fill similar or identical ecological niches. Moreover, the competing species need not be of the same order or animal perfection; indeed, two competing species need not even be two animal species. By and large the success of a species depends upon the adaptability of the constituent individuals, and in general adaptability and degree of adaptation are inversely

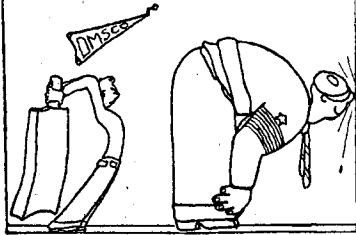
(Continued on Page 3)

## Students Attend National Convention

A number of our students found time from their studies to drop in on the National Convention. So Still College was well represented there what with a goodly number of faculty members (names listed in the July LOG BOOK) and the following students: Glen Deer, Dave Heffen, George Lewis, Herb Clausen, Frank Nasso and Bob Tonkins. Ed Mossman couldn't make it but he sent his better half, Mrs. Mossman, to bring him back the news. From the accounts of the students the Convention was a very interesting affair and they also managed to get a look or two at some of the interesting spots in Chicago before returning to Des Moines and the books.

# NEXT CLASS ENTERS OCT. 17, 1942

# FRATERNITY NOTES



ΨΣΑ

Gamma chapter of Psi Sigma Alpha has had one excellent banquet, taken in several fine new members and is now looking forward to a vital program for the balance of the semester.

At its banquet, July 22, the fraternity was honored by an address from Dr. Shiffler, pastor of the Highland Park Presbyterian Church, on "The Sublimity of Life." Dr. Owen and Dr. Kimberly told us many of the interesting highlights of the National Osteopathic Convention.

August 5, Gamma chapter initiated Gerald Dierdorff, Carl Waterbury and Robert Patten. Vern Stoner was pledged at this meeting and Charles Schultz will be initiated at the next business meeting. The society is proud to claim these men of high caliber.

All its members are looking forward to the banquet meeting to be held August 25 which promises to be our outstanding gathering of the semester. The guest of honor and principle speaker for that evening will be Dr. J. P. Schwartz, President of the College. It will be the chapter's privilege and pleasure to present Dr. Schwartz with an honorary life membership to Psi Sigma Alpha Society. Dr. O. E. Owen will be the toastmaster. All alumni of the chapter in and around Des Moines are cordially invited to attend this event.

—J. B.

## ATLAS CLUB

Highlighting the activities of the past two weeks, a stag party was held at the house last Friday night. Poker, ping pong, and harmonious (?) singing around the "old grand" served as the entertainment. A good turn-out of members as well as a few guests were on hand to share in the hilarity. This coming week-end a mixed party is tentatively planned.

A letter (obligingly written in English) was received recently from Dr. Herman Gegner, '42, who is located in South Dakota. "Herm" indicates that he has started a small clinic and manages to keep happily busy with his first tonsillectomies and varied cases of general practice.

Dr. Robert Smith, '41, was a welcome visitor at the school last week while on vacation from New Mexico. Brother "Bob" had interesting words of advice and tales of initial experiences in starting his practice in the ranch country of New Mexico. He appeared quite optimistic as to New Mexico's practice prospects.

—G. A. D.

ITS

Since our last written article in the LOG BOOK, many and varied events have occurred. Each of much interest.

Our Interfraternity Council Meeting was held in Chicago, during the A.O.A. Convention in the week of July 13th.

Those gathered were representatives from each of our Chapters from every one of the recognized Osteopathic Colleges.

The meeting began at 1:30 p. m. promptly, and lasted the whole day.

We discussed business of utmost importance which pertained to the further advancement of the fraternity. During this time, I had the good fortune to meet each brother representative and speak about various topics with them.

The frat banquet was held Tuesday evening at the exclusive Cliff Dwellers Club overlooking beautiful Lake Michigan. Here, we had present Brothers McFarland Tilly, new A.O.A. President; Chester D. Swope, Washington, D. C., representative, and a few of the founders of the I.T.S. fraternity, as well as many others.

The renewal of old acquaintances was refreshing and very stimulating to these men.

The Annual Smoker was held at Walnut Park in the form of a picnic, on July 22. The freshmen all attended with the exception of Jim Allender, who was detained elsewhere. Those who spoke were Drs. Cash and Sorenson. Hatchitt, pledge master, spoke to the freshmen and expressed the views and aims of our fraternity. We were proud to have been the hosts to these new men and trust that they have been completely "rushed" off their feet, and can now settle down to some plain "civilized" living again.

Our initiations will take place on Monday, August 10, at Dr. Cash's home. Those receiving their first considerations are Dr. M. B. Landis, L. L. Gaudet and W. Moore. Let's welcome these new men into our ranks and congratulations to them.

The recent additions to the pledge ranks are three men of the freshman class: Waldo Merrill, R. Rassmussen and C. P. Christianson. Congratulations, too!! And may your choice have been the wisest one.

We regret the sudden illness of Dr. Landis, of the O.B. department. Dr. Landis has been ill these past two weeks with strep-bronchitis.

When he returns with colors flying weakly, the O.B. department will again resume its normal stride. So, hurry back.

Keep 'em Flying!!

—F. J. N.

AOΓ

On Sunday, August 9th, the Calvaria Chapter of Lambda Omicron Gamma held its pledge dinner at the Kirkwood Hotel in honor of the pledges William Stoler, Paul Stern, and Robert Tonkins. This formally in-

creases our small but active group to five members, the two actives being Louis Radetsky and Arthur Abramsohn.

Plans are being made to hold study sessions in a seminar fashion, at which both actives and pledges will participate.

We wish to take this opportunity to send our greetings to our Brothers in the service and in practice.

—A. A.

ΣΣΦ

Sigma Sigma Phi held a meeting at the Taylor Clinic Thursday July 16. On this occasion the rushees were decided upon. After the meeting the actives went to a well known restaurant for a light lunch.

On Thursday, July 23, we held our annual pledge banquet at Babe's Cafe. A delightful steak dinner was served and enjoyed by all. The banquet was attended by a few of our practicing brothers. After the dinner we went to the Wil-Den Clinic in East Des Moines and were entertained with talks given by Drs. Wilson, Dennis and Devine.

Sigma Sigma Phi is happy to announce the initiation of several students of high quality. These students were selected on four qualifications, scholarship, character, leadership and affability. The new inductees are: Bill Capron, John Halley, Thomas McWilliams, Dave Heflen, Rolland Miller, Herbert Clausning and James Bone.

The singles tennis tournament sponsored by Sigma Sigma Phi is to be concluded within the near future.

The doubles tournament has been completed with George Lewis and Glen Deer defeating Paul Caris and Scottie Heatherington in the final match, 1-6, 12-10, 8-6. Sigma Sigma Phi medals will be given to the winners.

ΔΩ

Business as usual—only more pleasant. The summer weather makes our gatherings more enjoyable; viz., the girls were entertained at a garden dinner and social evening at the home of Dr. Mary E. Golden. Needless to say we had a grand time.

This may sound as though all we do is eat—but it's fun! "Mom" Wade turned her kitchen over to the ravages of the girls a couple of weeks ago. Result—a spaghetti and meat ball supper with all the trimmings for Mom and her household and the girls.

Oh yes, occasionally we remember school is in session and declare next week as one for concentrated study—but you know about this "next" week stuff.

Dr. Paul Park opened his office to the sorority one evening in the recent past and demonstrated his method of history taking and physical examination of a patient. We wish to thank you, Dr. Park for your time and courtesy.

So goes it—a balanced mixture of business and pleasure. See you again.

—M. W.

ΦΣΓ

After an unusually interesting rushing season, smoker and pledging, Phi Sigma Gamma was proud to hold their pledging ceremony for six of the new freshmen: Homer E. Allshouse, James W. Allender, Vernon D. Clausning, Robert J. McCracken, Richard P. Mucci, and Gordon F. Sherwood to welcome these six men to share the fellowship of our fraternity and hope that they will benefit from it as others have in the past.

On August 5th, Gail Boyd of Des Moines, was initiated formally into the fraternity.

Such unexpected parties as were held July 19th are always welcome diversions from the study routine. As is typical in fraternity houses "a bunch of the fellows" got together and decided to have an Italian spaghetti dinner, inviting all the Freshmen and their wives. Under the expert guidance of Mary Torriello and the fine kitchen technique of Ray Sweeney, everyone had all they could eat and didn't object to trying to eat more than they should. Just to prove his culinary art was not just beginner's luck, Sweeney cooked another meal for "the mob" at our fraternity picnic July 31. We're convinced now Sweeney, but don't let that stop you!

As a diversion from filling their stomachs, the fraternity has planned a record party to fill its record file. The admission to this dance is one record per member. In this way everyone gets at least one piece he really likes to dance to and the treasury remains full while the house enjoys the records for their duration.

We wish to thank Dr. Owen for his very instructive demonstrations of osteopathic technique at our last work night. The Chinese say, "one picture is worth ten thousand words"—the Phi Sigs say, "One demonstration by Dr. Owen is worth ten thousand pages and an equal number of thanks."

We send our congratulations to Brother O. G. Nielson and his wife who have informed us of the birth of a daughter, Sally Ann, born on July 4th.

—H. G. H.

## IMPORTANT

Each month the school is put to considerable expense paying postage on returned copies of the LOG BOOK. You can do your bit to help eliminate this unnecessary expense by dropping us a postcard telling of any change in your address. As well as helping the College you will thus insure your receiving the LOG BOOK on time.

## New Location

One of our alumni, Dr. E. Lawrence Hanson, has relocated for practice in Suite 401-404 Thatcher Building, Pueblo, Colorado. Best wishes from the school for your success, Dr. Hanson.

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Lester Raub, B. S.

Advisor.....J. P. Schwartz

Osteopathy Without Limitation

## Osteopathy Without Limitation

OSTEOPATHY WITHOUT LIMITATION has appeared as the slogan of the LOG BOOK for many years and has been maintained as the fundamental axiom of Des Moines Still College of Osteopathy since its founding in 1898. How expressive are these words as we are about to celebrate the FIFTIETH ANNIVERSARY of osteopathic education this autumn. They represent the ardent faith of the founders of our profession; the brilliant application of the present generation of practicing osteopathic physicians; and the zealous pursuits of the students in our colleges today.

How often do we stop to consider the broad reaches of our every day job? We take for granted the early advances in the development of science; such as the invention of the microscope; the discovery of the circulation of the blood; the advancement of the germ theory of disease; and within our own times, the principles of treatment in diabetes mellitus, syphilis, pernicious anemia and many others. How often do we in our own thinking list OSTEOPATHY along with these other advances in therapeutics, when in reality it represents one of the greatest of all the FRONTIERS OF MEDICINE presented to the world! So great in fact, that it has challenged over ten thousand men and women during the brief span of fifty years to follow its precepts and present them to a needy world. So revolutionary were the precepts of osteopathy that they led to the establishment of a new school of practice, while the other advances were simply added to the established armamentarium. There is no greater thrill than to see the gleam of enthusiasm and confidence in the eyes of an osteopathic student who has demonstrated for the first time WITH HIS OWN HANDS the healing powers of this great science.

No longer can we say "the old is out of date, the new is not yet born." We have watched this new science come into being and followed it through its growing years to maturity. OSTEOPATHY WITHOUT LIMITATION may well serve as the perpetual reminder of the widening frontier before us, as we pause to mark the fiftieth anniversary of its progress.

—O. Edwin Owen, D.O., Dean,  
Des Moines Still College of  
Osteopathy.

## Pursuit for a Reason

(Continued from Page 1)

reveal the different degrees of visceral involvement and forms the basis for the different methods of approach and diverse methods of treatment. "Pathology dictates treatment."

After the preliminary 24-48 hour period we find the lesioned muscle tissue is passively congested. There is great embarrassment to the venous and lymphatic return. If the muscle is contracted this impediment to fluid return is accentuated. If the muscle is not contracted the continuous trauma of hypermobility maintains the inflammation and the constant relaxation and stretch of the muscle offers almost the resistance to the return of fluid that is present in contracted muscle. It is "the rhythmical contraction and relaxation of muscle that facilitates return," not maintained contracture or persistent hypotonicity.

Passive congestion of muscle tissue initiates a definite progressive train of macroscopic, microscopic, chemical and physiological changes. The muscle is turgid and visibly inflamed. There is an increase in the normal hydrostatic pressure in the belly of the muscle. The veins are distended, areas of capillary hemorrhage are present. Fibrillation is frequently present and the muscle is hyperirritable. Usually there is an increase in the tension element with the muscle shortened by contracture and, of course, the joint normally influenced by the muscles is therefore restricted in its mobility. Such a muscle when cut shows free fluid, edema; and there is irregular puckering of the cut surface or corrugation due to difference in retraction.

Experimentally a muscle so involved is found to be, when removed from the body, temporarily hypertonic and hyperirritable, but sooner than in normal control muscle degenerative changes are evident. The muscle is fragile and ruptures its fibers and its mass with less weight. It is more extensible—the same weight stretches it more. It is less retractile, it does not shorten, due to its depreciated elasticity, as much as normal muscle does.

Microscopically the muscle tissue in the area of lesion effect shows engorged veins and lymph spaces, intra and extracellular edema. There are further signs of the capillary damage evidenced by the frequent presence of round cell infiltration, both red and whites being found in the muscle sheaths between the muscle bundles and fibers and also in the muscle fibrils themselves. There is eccentricity, edema, and shifting of the position of the nuclei of the cells. The fiber margins are not so clearly defined as in control muscle.

Many of the arteries, arterioles and venules show an intimal thickening, with adventitial proliferation in their walls. In a few this evidence of inflammation in

## Minutes of Annual Meeting

(Continued from Page 1)

After the election of officers, Dr. Frank Jones gave what he termed the "Swan Song" and as usual left some very fine thoughts with the group assembled. He also called attention to the fact that any adversity makes an individual or organization stronger because of having had the experience, and charged each and everyone present with the responsibility of doing his utmost for organized Osteopathy and especially for its educational institutions.

Meeting adjourned at 11:00 p. m.

—P. L. Park, D.O., Executive Sec. and Treas.

the vessels is so marked that the lumen is all but, if not completely, obliterated. In long standing myositis a few vessels are definitely reduced to fibrous cords.

The nerve terminals in the muscle give evidence of inflammation to the same degree as the muscle. The sensory processes are edematous and not clearly defined.

Chemically the muscle is altered quite markedly. First and most obvious is the pH change with increased H ion concentration. The normal products of metabolism are acid in reaction, and where trauma is repeated or where muscle is contracted with insufficient relaxation phase these acid metabolites are impaired in their removal and their neutralization. Increased H ion concentration is demonstrable by dyes, staining reactions, H ion measuring equipment and by the known effect of acidosis upon tissue.

Dyes such as acid fuchsin will dye acid tissue and not normal tissue. When injected into lesioned muscle and other areas on the same animal examination finds the lesioned muscle is stained and the normal muscle is not. In the staining of tissue sections it is found that the usual staining materials stain muscle of the lesion area poorly due to the acidosis of the muscle. With a potentiometer and galvanometer it is possible to determine the H ion concentration. Muscle tissue is less alkaline than most other body tissues and a pH of 7.00 is not infrequently encountered following extreme muscle exercise and mild inflammatory reactions. A pH of 6.8 or 6.9 is present in extremely severe myositis such as is present in any acute lesion, showing a pH change of as great as .5 of an H ion unit. This is a pH change that is greater than appears in any other body tissue.

The known effect of pH fluctuation upon tissue reveals the effects of acidosis in the lesion area. When colloidal tissue is placed in a more acid medium it becomes hygroscopic, absorbing and holding fluid. An intra and extracellular edema is produced. This edema has considerable effect locally upon all the tissue in the spinal area, including of particular importance muscle, nerve tissue, venules and lymphatics, the synovial membrane and the lateral chain ganglion. All of these tissues are exposed, by continuity and contiguity, to the deleterious effects of both the local acidosis and edema.

—Byron E. Laycock.

(Continued Next Issue)

## Bacteriology and Medicine

(Continued from Page 1)

proportional. Hence those forms which are most generalized will be more successful than those which are highly specialized, and biological success may be defined as the ability of the individual to reproduce its kind, to withstand changes in the external environment (or to change in response to external changes, either temporarily or permanently).

One of the most interesting methods of biological adjustment is parasitism, a phenomenon exhibited by all types of life from the simplest to the most complex. (And most people would concur in the inclusion of the hominid primates). Parasitism is existence of one species at the expense of another without doing great or irreparable damage to the host. It may, though it need not, have grown out of a symbiotic relationship in which the two species are mutually beneficial, or commensalism, whereby two species live together without damage to either. Contrasted with the parasite, which derives its livelihood from a living host, is the saprophyte which lives on dead or decaying organic matter.

Bacteria, being "simple" as living things go, and generalized, have members which have tried all of these relationships. In their proper habitat they reproduce rapidly; they have a rather wide range of tolerance for environmental changes; they are widely distributed. Bacteria are biologically successful. It is futile to try to decide whether bacteria, simple as they are, constitute the genetic ancestors of the animal kingdom; or whether they are transitional or merely coincidentally intermediate between the plant and animal kingdoms. The fact is that they are simple and probably (consequently?) they were here first, and other animals as they evolved, have had to contend with

(Continued on Page 4)

## Marriages

The Log Book is happy to hear of the marriage of Lorraine Ann, daughter of Dr. and Mrs. George H. Lawyer, to Mr. James Dewey Mitchell on Monday, July 20, in Houghton, Michigan. The young couple will be at home at "Wil-Bil-Ett" Cottage, Chassell, Michigan.

## I. S. O. P. S.

**Dr. Golden Elected A.O.A. Trustee**

President Mary E. Golden was elected a member of the Board of Trustees of the American Osteopathic Association at its recent national convention in Chicago.

**Dr. Hannan Re-elected**

Dr. D. E. Hannan, Chairman of the Dept. of Public Affairs of the Iowa Board of Osteopathic Examiners was reelected President of the American Association of Osteopathic Examiners at its annual meeting held during the annual convention of the A.O.A.

**Dr. Lydia Jordan Elected Vice President of O.W.N.A.**

Dr. Lydia T. Jordan was elected first Vice President of the Osteopathic Women's National Association at its recent annual meeting in Chicago.

**Dr. L. L. Facto Honored**

Dr. Lonnie L. Facto, Chairman of the Society's Council on Defense and Preparedness, has been elected vice chairman of the Osteopathic Manipulative Therapeutic and Clinical Research Association.

**Dr. Owen Elected**

Dr. O. Edwin Owen was re-elected editor of Psi Sigma Alpha honor society, osteopathic fraternity, and re-elected secretary-treasurer of Phi Sigma Gamma osteopathic fraternity, at meetings of those organizations held during the A.O.A. convention.

**Dr. Klein Appointed**

Dr. S. H. Klein has been re-appointed chairman of the Regional Advisory Council of the Seventh Corps Area of the A.O.A. by President E. McFarlane Tilley.

**Board of Examiners**

Dr. H. B. Willard has been re-appointed a member of the Iowa Board of Osteopathic Examiners for a three year term by Governor George A. Wilson.

**Board of Trustees**

The second meeting of the Board of Trustees for the present fiscal year will be held at Hotel Fort Des Moines, Des Moines, on Sunday, August 30, 1942.

**Osteopathic Hospital Association**

Dr. L. W. Jamieson, Chairman of the Hospital Committee of the Society, is planning to call a meeting in the near future of the owners and operators of all osteopathic hospitals in the State for the purpose of organizing the Iowa Osteopathic Hospital Association.

**Rocky Mountain Spotted Fever**

Through the efforts of Dr. D. E. Hannan, Chairman of the Department of Public Affairs, chick embryo vaccine for active immunization against Rocky Mountain Spotted Fever is available for distribution by the Iowa State Department of Health to osteopathic physicians upon request. The use of the vaccine is best limited to persons who are subject to repeated exposure in a known endemic area.

**Dr. Day Elected to Council**

Dr. M. C. Day, Indianola, was recently elected a member of the City Council representing the third ward of his city.

**Dr. Bobenhouse Teaching First Aid**

Dr. H. H. Bobenhouse, Earlham, is teaching two Red Cross first aid classes in his town. One class of sixteen is composed of the local members of the fire department and the other class of thirty-eight consists of members of several organizations in his community.

**Membership Applications**

C. L. Henkel, Cumming, Iowa.  
O. H. Meyers, Sioux City, Iowa.  
—Dwight S. James, Sec.-Treas.

**Bacteriology and Medicine**

(Continued from Page 3)

them and with their ability to meet successfully new biological situations. Among the species which have had to contend with them are humans; and the fact that this is being written is evidence in itself that in their contention they have been equipped with adequate implements for biological warfare. It will be interesting to postulate regarding the source of some of these mechanisms.

Because of the efficiency with which the skin and mucous membranes act in preventing bacteria from gaining entrance to the body, relatively few examples of true parasitism are found. These tissues possess the faculty of localizing bacteria by both chemical and mechanical means. Usually a protein constituent of the bacteria, but sometimes carbohydrates as well, elicits a specific response from the skin. The method used is not understood, but the result is that the protein or carbohydrate antigenic substance is anchored at the site of attack. This is the phenomenon of tissue immunity; it is an ability held by all tissues to varying degrees, but it is greatest in the tissues most frequently exposed to bacterial invasion.

If this device is inadequate to control the invasion, the blood stream assists in the task. Its action may be direct—by phagocytosis of the organism, or it may be indirect, by one of several means. Toxin-producing bacteria may elicit the production of specific antitoxins by leucocytes or reticulo-endothelial cells; agglutinins may render bacterial attempts ineffective by causing them to clump or agglutinate; precipitins cause the precipitation of noxious proteins; sometimes following agglutination, and sometimes independently, plasmolytic destruction of bacteria occurs. Such hemal protective agents may be retained in the blood stream, so that they are available to resist entrance and establishment of the foreign element at some later time. Temporary, acquired protection or im-

munity, is not difficult to understand on the basis of retention of antibodies. To explain natural immunity, however, it seems that heredity must play a part—actual morphological inheritance. In this instance the structure transmitted to cellular progeny must be of a molecular order; it would presumably have come from the earliest animal ancestors which, accidentally, developed intracellular chemical mechanisms capable of resisting attack by bacteria. These cellular qualities have then been transmitted through the long, unbroken chain of protoplasmic continuity in time from generation to generation. The fact that some cells have become modified (as muscle, nerve, bone, etc.) tends to draw our attention from the basic, chemical cellular heritage, but if we remove this veil of specialization it is logical that we should find the morphological and physiological qualities which have served throughout the history of protoplasm to maintain it as a living entity.

These cellular defense mechanism, we may presume, are most efficient in a cell whose metabolism is maintained at an optimal level. In humans, cellular metabolism is dependent on adequate supply of food and oxygen and adequate removal of metabolic waste. This means good blood supply and good lymphatic and venous drainage. These factors are maintained by autonomic nerve supply very largely. It will then be obvious that adequate functioning capacity of the chief body resistance factors is intimately associated with normal bony relationships in the vertebral column. In active, exercising individuals such as our ancestors might have been, abnormalities in these relationships probably were not such a serious problem; in sedentary or only moderately active individuals, taking advantage of the non-biological developments in human society and discarding when possible the animal requisites inherent in their bodies, the problem may become more acute. It is feasible then that osteopathic manipulation may be prophylactic as well as curative, in that the body cells are better able to perform their functions with maximum efficiency. But it must be borne in mind that this phase of osteopathic therapy does not date from 1892 or 1874, but from the beginning of life itself. "Osteopathy" in principle is extremely ancient; man's recognition of the possibilities for applying the principles are recent.

Although the intrinsic qualities of the human race are sufficient to preserve it in competition with other animals, that, in itself, is insufficient. Since the time when bacteria were first observed and recognized to play a role in infectious disease man has persisted in an effort to exclude bacteria as causative agents. To this end effort has been made chiefly along the following lines: (1) Identification of bacteria, and recognition of those which are pathogenic, for no progress can be made against them until they have been isolated, classified and

understood; (2) Diagnosis, by direct examination, serological means or other physiological behavior, such as cultural characteristics; (3) Detection of individuals susceptible to disease; and (4) Specific prophylaxis and therapy.

Identification of the pathogen involves considerably more than merely staining and examining organisms from a site of infection, included with the one responsible for a given set of symptoms may be many which are harmless. Hence, one must be obtained in pure culture and organisms from this culture should be observed to produce the disease in a second animal, from which another pure culture may be made. When such conditions have been fulfilled (Koch's postulates) the causative agent is reasonably well known; however, these requisites cannot be fulfilled in all instances, unless another human being is used as the "guinea pig," (e. g., *Gonococcus*). Following the initial proof of association of a certain organism with a specific disease, staining and cultural reactions may suffice.

When it was recognized that a specific antigen-antibody relationship existed in the body following infection, it became possible to use this type of reaction in actual diagnosis. Such a physiological response on the part of the host in the presence of the bacterium in many instances is quite as conclusive as direct observation. Examples of such behavior are the Dick test for scarlet fever, the Schick test for diphtheria, and the Kahn and Wasserman tests for syphilis and others, as the numerous allergy tests. The same physiological processes are not involved in all of these, of course, but all depend on a response through one or more of the body resistance factors to an antigenic substance.

Specific prophylaxis and therapy have been developed as rapidly as the physiological behavior of the bacteria could be determined, for knowledge of their behavior is necessary for both prevention and cure. Simple antiseptics was the first step in this direction, by which is meant simply that the bacteria were destroyed, usually by a rather rigorous treatment with a chemical agent, heat, x-ray or other device found to be bactericidal. These agents may be applied with comparative safety outside the body, but the search for the perfect bactericide which will not poison or otherwise harm the body still continues. The "sulfa" drugs are the most recent and most successful developments in this field, although these must be used with caution. Enough benefit has been derived from them, however, to warrant close attention to them and additional work in their behalf, whereby their uses and abuses may be more clearly comprehended.

It is recognized that this short paper cannot do justice to the rather presumptuous title; however, it may serve to outline the problems concerned.

—Hugh Clark, Ph.D.



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# THE LOG BOOK

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Volume 20

SEPTEMBER 15, 1942

NUMBER 9

## Schedule

Graduation of this semester's Senior A's will be on October 17; Registration for students old and new will take place October 19; and the next day, October 20, classes will meet for the new semester. We hope that in the few weeks remaining students and especially alumni, who have more chance for contacts, will do their best to promote registration of new students.

## Pursuit for a Reason

(Continued from August issue)

### Muscle Tissue

Perversion of physiology of muscle in the area of myositis is evidenced by its irritability, its increased tension, shortened relaxation phases, more or less maintained contracture which is always pathological and the failure of the functions of muscle that normally aid other tissues such as the vessels, nerves and the joint it moves.

Characteristics of muscle are its irritability and conductivity. A motor unit is made up of about 200 muscle fibers and one motor neurone. A muscle is composed of thousands of such motor units.

An impulse passes along the motor neurone and all of the fibers associated with it contract. A group of motor units contracting simultaneously produces muscle contraction. After each contraction there is a relaxation phase normally and a refractory period similar to that of nerve tissue only not so inflexible. During the relaxation phase the acid products resulting from the contraction are mostly resynthesized and partly removed by the venous and lymphatic drainage. Normal muscle demonstrates a minimum of motor energy units. Resting muscle has none—it is believed, contracting muscle from 2 to 6 and occasionally 20 per second. Areas of myositis reveal sometimes as high as 40 motor energy units per second passing through the area. Hence the irritability is increased 10 to 20 times. Conductivity is accentuated as is seen by a single stimulus causing a rapid contraction of the whole muscle in a myositic area. Obviously it is an error to vigorously massage or knead an acutely inflamed area. The shortened relaxation phase prevents the resynthesis of the various glucose and acid combinations that form the apparent energy for contraction. The increased H ion concentration and the subsequent

(Continued on Page 3)

## New Semester Opens on October 19th

O. Edwin Owen, D. O., Dean

On October 19th the fall semester begins immediately following the close of the summer semester on October 16th. The College has been in continuous session since September 1941, with the exception of two weeks at Christmas and two weeks in June. The year-round war emergency schedule makes it possible to complete the standard four year course in three years time without sacrificing subject content or lowering of standards. By this speed-up schedule well qualified Osteopathic Physicians and Surgeons will be more immediately available to relieve the shortage of doctors which is so acute at this time of national emergency.

Young men and women who have completed two years of college work should seriously consider entering Des Moines Still College of Osteopathy at this time. Never before have professional opportunities been so great as at this time in our national history.

As we are about to celebrate the FIFTIETH ANNIVERSARY OF OSTEOPATHIC EDUCATION on October 2nd, may we pause to visualize the growth and expansion of Osteopathy from the ideas of one man . . . Dr. Andrew Still, to the accomplishments of a profession today embracing 10,000 practicing physicians in various parts of the world. This growth has emanated from the OSTEOPATHIC COLLEGES as successive generations of students have gone forth.

The challenge is even greater today, with the many modern advances and applications of the original principles in osteopathic theory and practice. Des Moines Still College of Osteopathy is equipped in every department to present thorough work. Clinical material is abundant in every phase of disease. Each department is headed by faculty members well qualified in their respective fields. Student enthusiasm is high, cognizant of the important place they will soon hold in guarding the health of the nation.

We trust that an ever increasing number of young men and women will think seriously of beginning the study of osteopathy this fall.

## Program for the Fiftieth Anniversary of Osteopathic Education

PRESENTED BY THE FACULTY  
of

DES MOINES STILL COLLEGE OF OSTEOPATHY  
AT THE COLLEGE BUILDING

October 2, 1941

720-722 Sixth Avenue, Des Moines, Iowa

- |             |  |                        |
|-------------|--|------------------------|
| 9:30 A. M.  | Cerebral and Spinal Concussions, True "Shell Shock"                  | Dr. R. B. Bachman      |
| 9:50 A. M.  | War Paralysis, Contractures, Rheumatism, Sciatica, Postures and Gait | Dr. B. E. Laycock      |
| 10:40 A. M. | War Neurosis   | Dr. L. L. Facto        |
| 11:30 A. M. | Gas Poisoning  | J. B. Shumaker, Ph. D. |
| 1:30 P. M.  | Skin Diseases in War   | Dr. John M. Woods      |
| 2:25 P. M.  | Dysentery  | H. D. Clark, Ph. D.    |
| 2:45 P. M.  | Digestive Disorders in Soldiers                                      | Dr. O. E. Owen         |
| 3:40 P. M.  | Trench Fever   | Dr. M. B. Landis       |
| 4:00 P. M.  | Tetanus  | Dr. P. E. Kinberly     |

## Lymphatics, Lymph and Lymphoid Tissue

The lymphatic system consists of four elements: tissue fluid, lymph, lymphatic vessels and lymphoid tissue. All of these have been considered important by the Osteopathic Physician, and for this reason attention is called to the monograph by Cecil K. Drinker and Joseph Mendel Yoffey (Harvard University Press, 1941), from which most of the following material is taken.

### Tissue Fluid

Upon the evolutionary completion of the closed circulatory system, a rather anomalous situation was created. The blood stream, carrying metabolic essentials for the tissues, was entirely shut off from the tissues which were to be supplied. Yet the cellular requirements were in solution in the blood and had to be transported to the cells in solution. Obviously a fluid medium must intervene between the blood capillaries and the tissue cells. This fluid is the tissue fluid, similar in many respects to lymph but distinct from it because it is not confined by a system of vessels. It is the tissue fluid, primarily, to which Claude Bernard referred in speaking of the milieu interieure.

Hence: (1) tissue fluid was formed as a necessary vehicle for solutes coming from the blood stream and returning to the blood as waste products, by virtue of capillary permeability; (2) it is **extravascular**; (3) it is similar in constitution to lymph (which is intravascular); (4) it is formed chiefly by the blood as a capillary exudate.

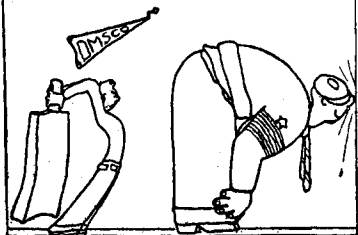
### Lymphatic Capillaries and Lymph

Because of the similarity between tissue fluid and lymph, it is apparent that the permeability of lymphatic capillaries is high. If this were not true protein would be allowed to accumulate in the interstitial fluid, thus increasing its osmotic pressure and preventing the dialysis of metabolic solutes and perhaps even dehydrating the blood.

"The great function of the lymphatics is to remove from the tissues material which is not absorbed by the blood capillaries." Although colloidal solutions readily enter lymphatic capillaries, it is understood that they must reach the capillaries before they can be absorbed. This acquires some significance, for example, in the entrance of proteins and bacteria through the nasopharyngeal membrane. Horse serum has

(Continued on Page 2)

## FRATERNITY NOTES



## ITS

On August 10th our new pledges: L. L. Gaudet, Dr. M. B. Landis, and W. T. More, received their preliminary initiatory degrees, at the home of Dr. Cash.

Our assembly on Friday morning, September 4th, had as its guest speaker Mr. Thomas Mulready. Mr. Mulready is a news commentator associated with radio station WHO. He is considered to be very well read and a keen observer on war events and world affairs. His topic, in the form of an open letter entitled "Hate," was aimed directly at Hitler and what has happened to our civilized world today. It was ably presented and well received by the student body.

On the evening of September 4th we were the guests of Dr. Gehman. Dr. Gehman is considered an accepted authority on blood and its diseases, and his reputation as a hematologist is well known here and elsewhere.

During the same evening we pledged Mr. Woodmansee our newest and latest addition—Congratulations.

Our Brother Alumnus, Dr. B. L. Cash, has returned from his two weeks' vacation looking fine and healthy. With his return the X-ray class is now meeting again as usual.

Anyone can easily see that the O. B. Clinic is once more assuming its rigid standards of function. It's simply due to the fact that Dr. Landis (Simon Legree), Director, having completely recovered from his recent illness is again ruling with an iron hand. Woe to those who cannot meet the requirements!

Our newer activities will include further initiations of pledges, followed by a meeting as guests of Dr. Sloan at his office, and a surprise for the students at assembly time, should arrangements be completed successfully.

Keep 'em Flying !!!

—F. J. N.

## AOF

All has been quiet on our fraternity front this last month. Everybody has been busy preparing for their twelve-weeks exams—the seniors, of course, are busy preparing for qualifying exams. We want to take this opportunity to wish them all the best of luck.

After qualifying exams are over we are planning to have work nights on various subjects pertaining to osteopathy. Arthur Abramsohn is preparing a pro-

gram for one night to familiarize our group with the work being done by Dr. Sutherland on cranial technic.

Congratulations to Dr. Irving Ansfield, one of our last year alumni who is getting married this month, we know that he and his wife will be both successful and happy.

—A. A.

## ΨΣΑ

The last two meetings of Psi Sigma Alpha have indicated a definite note of progress in the organization.

On Aug. 24 at the Atlas Club the fraternity initiated Charles Schultz and then heard an excellent discussion by its president, Lou Radetsky, on the purpose, plan and value of the new "extern system" recently adopted by the Des Moines General Hospital for Senior A's.

At the Brown Hotel Sept. 8, Psi Sigma Alpha had the honor of presenting J. P. Schwartz, president of the college, with an Honorary Life Membership. The fraternity was further honored by two representatives of the Drake University chapter of Phi Beta Kappa, Mrs. Kenneth Shawhan and Mr. Frankhauser.

Dr. Owen, Dr. Graney, Dr. Schwartz and Mrs. Shawhan each spoke briefly on the value of greater scholastic effort in all schools, particularly under present world conditions.

—J. B.

## ΔΩ

A breathing spell again to prepare for the "end of the semester" activities.

Sarah Jean Gibson was entertained by the sorority at a "rush" dinner held at the Tallo-Ho Club followed with a show downtown.

The sorority is making plans to donate something to the new student lounge—so far however, nothing has been definitely decided upon. But give us time—we'll think of something.

Right now we are busy making arrangements for our assembly program coming up Friday. By the way fellows, Captain Rayburn is going to give us an advance tip on traffic regulations.

Delta Omega Beta extends its deepest sympathy to those suffering Senior "A's" as they worry through those inevitable "qualifications." If wishes and sympathy for you are of any avail—your future is assured.

—M. W.

## ΦΣΓ

Since the Phi Sigs last made their monthly report to the Log Book, the Chapter house has taken on a new and more cheerful atmosphere with a new coat of wall paper in all the rooms. It is a long-looked-forward-to event and all the members are well pleased with the results.

On Sunday, September 6th, Brother Herb Clausen and the former Miss Betty Annas were married in the bride's home in Jewell, Iowa. The Chapter ex-

tends its congratulations and best wishes to the new couple.

Pledge Master Crane announced that pledge McCracken has been elected Pledge Captain by his Pledge brothers. They have promised to show the active chapter several good times before their initiation which is expected to take place sometime in late October or early November.

Brother Bill Carhart has made arrangements for several very instructive movies which will be shown at the next work night at the Chapter House. All during the month of August the regular work nights have been cancelled due to the heat; but now that fall is in the air again everyone feels more like going places and doing things. In the past the work nights have always proven a fine extra-curricular activity—enough so to be continued for some time into the future.

—H. G. H.

## ATLAS CLUB

Between pressure from Dan Cupid and Adolfus Hitler, the Atlas Club recently deemed it advisable to make some changes. Due to the new low in student enrollment because of the war demands and the fact that the students who have enrolled the last three semesters were to a great extent married men, (and the old "confirmed" have slipped too) the Atlas House, as have other fraternity houses, found itself with the fewest occupants in many years. Because the house thus served a relative few except for the several "bull sessions" and frat parties, the trustees and members of the corporation took advantage of the increasing demand of defense workers, nursing homes, etc., for more living quarters, and sold the house and property to a Mrs. White. Thus, rather than being a burden to the good brothers who have succumbed to the marriage vows, receipts from the property, above any stocks or debts, will stand as a potential investment for a house in the future—if Cupid and Hitler will "let up." Until then, the club, will continue to meet and hold its activities in some rented hall.

A last, lively party on the evening of August 29 found nearly twenty couples at the house engaged in "having themselves a time." Representatives from the other social fraternities of the school were present as well as several alumni and wives. Dancing, refreshments, and a brief program served to entertain the group.

The following men have been pledged to Atlas since the smokers of the first semester: Ed Yogus, freshman; Charles Schwab, freshman; Floyd Tollen, sophomore and Chris Ginn, junior. The Atlas Club is pleased to receive these new men as pledges of the fraternity and sincerely desires that they will never have occasion to regret their decision.

—G. A. D.

## LYMPHATICS

(Continued from Page 1)

been absorbed to the extent (rabbits) of producing anaphylactic shock by this route; active immunization to both diphtheria and scarlet fever has been produced in the same way; moreover, **B. tuberculosis** and **Pneumococcus** type III have been collected from cervical lymph within an hour after being placed in the nose. There is likewise a rapid absorption of water, crystalloids and particulate matter, including **Pneumococcus**, from the lungs. This organism has been cultured from lymph one hour after having been placed in the rabbit trachea. The movement of the organism is too rapid to be accounted for by phagocytosis and migration of the phagocyte—the actual mechanism involved is not understood. However, "for such rapid absorption the movements of breathing are very important." The rate of absorption from the pleural cavity is much slower, but "just as is the case in the lungs, respiratory movements are of great importance in bringing about lymphatic absorption in the pleural sacs." And it follows that the **osteopathic lymphatic pump likewise hastens the clearance of pulmonary epithelium of infective agents.**

There is no evidence that particulate matter will pass through the intestinal wall without phagocytosis. It is generally thought bacterial invasion can occur only after mucosal injury. Drinker adds, "It seems certain that such organisms as the typhoid bacillus must penetrate the normal epithelium and proliferate in the mucosa, particularly in the lymphoid tissues. Once resident in the mucosa—with little doubt—will after a time be found in the lymph, and will very possibly reach the blood largely via the thoracic duct lymph."

Permeability of lymphatics, and therefore lymph constitution and function in many other organs have been summarized by the author. The ultimate destination of all the lymph is the blood stream, and an analysis of factors governing the return follows.

(Continued on Page 4)

## West Virginia

## State Board Exam

The next meeting of the West Virginia Board of Osteopathy will be held at the Daniel Boone Hotel, Charleston, West Virginia, October 26 and 27, 1942. The time of the meeting has been changed due to the change in date of graduation at our schools owing to the war effort.

Applications for either examination or reciprocity to be considered at this meeting must be filed with the Secretary not later than October 1, 1942.

Application blanks may be secured by writing the Secretary, Guy E. Morris, D. O., 542 Empire National Bank Bldg., Clarksburg, West Virginia.

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Lester Raub, B. S.

Advisor.....J. P. Schwartz

Osteopathy Without Limitation

## Pursuit for a Reason

(Continued From Page 1)

edema maintains contracture. Failure of the muscle to perform its normal functions is an important factor in the lesion area. Contraction, relaxation and the joint motion element are the reasons for the presence of muscle. Whenever the muscle remains contracted or does not rhythmically contract and relax to move joints there ensues a pathologic change. Contraction and relaxation of muscle facilitates venous and lymphatic return from the belly of the muscle, from the venules and lymphatics around and under the muscle and the oscillatory joint motion resulting is the important element in removing fluid from the interior of the joint. When these aids are not operative then progressive inflammatory and degenerative changes begin. Fluid accumulates in the soft tissue and in the joint. The fluid that accumulates is the venous and lymphatic return containing the metabolic products. As has been mentioned before relative acidosis and finally definite acidosis results. This causes the imbibition of fluid, or edema. Edematous pressure further impedes venous and lymphatic return and increases the fluid pressure in and around the muscle and in the joint. Capillary damage and the resultant hemorrhage produces fibrin and stimulates fibrous tissue formation. Fibrous tissue is a mechanism of repair. It attempts to resist passively the strain that would otherwise continue to fall on muscle. Fibrous tissue in a joint restricts joint mobility unless it is ruptured but fibrous tissue reduces parenchymatous tissue function and it impairs venous and lymphatic return and therefore tends to maintain lesion pathology. Manipulative treatment that maintains joint mobility and causes normal muscle contraction-relaxation prevents the formation of this scar tissue and prevents its replacing the parenchymatous tissue. Motion removes fluid from the muscle and the joint and prevents its retention of metabolites and its tissue effect. The fluid in a spinal joint as in any other joint produces first an inflammation of the synovial membrane and finally a pressure atrophy, fibrosis and adhesion formation. The reflex effect of the synovitis due to the embarrassed joint motion is great, just that study constitutes a separate survey in itself. Preventing this inflammation by proper manipulation is one of the most important indications for Osteopathic treatment during the course of any condition that pre-

## FIFTIETH ANNIVERSARY CELEBRATION OF OSTEOPATHIC EDUCATION

The first class of osteopathic students began their training under the personal supervision of Dr. Andrew Taylor Still in a small school room at Kirksville, Missouri on October 3, 1892. This year, 1942, marks the GOLDEN ANNIVERSARY of that momentous occasion. The week ending October 3rd, 1942 will see many celebrations in honor of the OLD DOCTOR and particularly commemorating the humble beginning of a profession that has seen constant growth to this day. It is the desire of the American Osteopathic Association and the pleasure of Osteopathic Physicians and Surgeons the country over to pause for a few hours to let others know what has been accomplished in the unselfish interest of humanity.

Des Moines Still College of Osteopathy in cooperation with the Polk County and Sixth District Societies, is planning a large celebration in Des Moines on October 2, 1942. There will be a technical program at the College opening at 9:00 a. m. and closing at 4:30 p. m. The chief feature of the program will be a symposium on WAR INJURIES AND DISEASE, emphasizing information every physician needs to have at his finger-tips just now.

The Polk County Womens Auxiliary has extensive plans for an Afternoon Tea, to which the wives are invited. This event also, will be pitched to a high crescendo.

The high-light of the celebration will be the evening program. A banquet will be held in the Grand Ballroom of the Fort Des Moines Hotel. Dr. H. G. Harmon, President of Drake University is the speaker of the evening. The master of ceremonies will be the able Mr. Arthur Brayton of the Des Moines Chamber of Commerce.

THE FIFTIETH ANNIVERSARY CELEBRATION OF OSTEOPATHIC EDUCATION is destined to be an occasion long to be remembered in the annals of our profession. Osteopathic Students and Physicians, their families and friends, business associates, vocational guidance directors of colleges, and prospective osteopathic students alike, will find the entire day's activities an opportunity to enhance their understanding of the accomplishments and opportunities advanced by the Osteopathic profession.

Plan now to be in Des Moines on October 2nd to join in the celebration.

vents normal facilitation of venous and lymphatic return by rhythmical contraction and relaxation of muscles and oscillatory joint motion.

\* \* \*

## Intervertebral Foramen

The requirements for space necessitating the cutting of the previous paper continued in this issue, permits the completion of this section with a few observations on the Intervertebral Foramen. A very superficial examination of the Foramen or Duct ostra, its anatomy and the structures within it reveals that we have neglected this subject. Possibly one reason for avoiding it has been our definite effort to inform the lay public that bony pressure upon nerves in the foramen does not occur, except in dislocation, fractures or overgrowth of bone due to hypertrophic lipping, and that bony pressure therefore does not enter into the reflex mechanism of the Osteopathic Lesion.

In leaning over backwards avoiding the Foramen we have

been unobservant of a definite pressure element due to fluid collecting in it.

How much this edema in the foramen plays in every Osteopathic Lesion only subsequent research will demonstrate but because of the anatomy and physiology of the area we can without much hazard predict that the foramen is an important factor in many lesion, and its involvement is doubtlessly also an important maintaining factor in lesion pathology.

The Duct Ostra is bounded superiorly and inferiorly by the vertebral pedicles, posteriorly by the articular process and facets, anteriorly by the intervertebral disc, and in the thoracic area by the heads and necks of the ribs.

The foramen is a tunnel  $\frac{3}{8}$ -inch in diameter and roughly  $\frac{1}{4}$ -inch long. It is lined by reflections from the surrounding ligaments. Centrally it is occluded by reflections from the meninges and by a fibro-adipose plug. This fibrous and fatty tissue becomes increasingly more fibrous until

## Births

### Student Contributions:

Vernon Stoner and wife, Adaire, announce their second son, James William, born at Mom Wade's on July 25. This is one the **Log Book** slipped up on last month. Vern may be wondering if we were waiting until the baby could read this notice.

One of our Japanese students from the Los Angeles school, George Shimoda, and his wife, Tama, also have a baby boy, Christian Tobo, born August 13.

Mr. and Mrs. Peace announce the birth of an eight and half pound son on August 1st. The boy has been named Dale Conrad and was born at the Des Moines General Hospital. Formerly Mrs. Peace was also a student but Dale's advent forced her to let her husband carry on at Still for a while alone.

### From the Alumni:

Lt. and Mrs. Joseph P. Connolly announce the arrival of Joseph Patrick III, on August 19. Weight—eight pounds; officiating—Dr. Burnie Moeller.

Dr. Stephen D. Russell and wife announce a baby born August 3rd, weighing seven pounds and thirteen ounces. Yet it's a boy too, Larry Stephen, and Dr. Russell says, "Everyone is doing fine, including me."

at the external end of the foramen the occluding plug is mostly fibrous tissue and is continuous with the surrounding ligaments.

The purpose of the fibrous tissue in and at the ends of the foramen is of course to prevent intra-abdominal or intra-thoracic pressures from influencing markedly the pressure on the cord.

The following structures are found inside the closed tube that we call the foramen:

1. Nerve of Luschka.
2. Nerve endings, trophic and proprioceptive.
3. Dorsal root ganglion.
4. Spinal nerve.
5. Spinal artery, vein, lymphatics and their tributary branches to all tissues medial to the external end of the intervertebral foramina.
6. Vasa vasorum and Vasa nervorum.
7. Nervi vasorum and nervi nervorum.
8. Reflections of periosteum, ligaments and fascia from the surrounding spinal tissues.

10 to 25% of the area of the foramen is filled by nerve tissue. The remaining 75 to 90% is filled with artery, veins, lymphatics, fat, fascia, etc. It is obvious therefore that bony compression of nerve trunks is impossible since the range of motion is greater into flexion than into extension.

The ability of edematous pressure in the foramen to pervert function in the above listed anatomical structures is evident, and the rather extensive effect on the cord and peripheral visceral and somatic tissues is of equal interest. Passive motion in aiding to remove fluid from and through the foramen cannot but be a desirable element of treatment. —Byron E. Laycock.

## I. S. O. P. S.

## Fall District Meetings

President Golden announces the fall District Circuit Meetings will be held as follows:

District I, Monday, October 12, Cedar Rapids.

District II, Friday, October 16, Atlantic.

District III, Sunday, October 11, Ottumwa.

District IV, Tuesday, October 13, Mason City.

District V, Wednesday, October 14, Storm Lake.

District VI, Thursday, October 15, Adel.

## Annual Society Convention

Ruth Paul, Chairman of the Committee on Convention Arrangements, reports that the annual convention of the Society will be held at Hotel Fort Des Moines, Des Moines, on Monday and Tuesday, May 17 and 18.

The House of Delegates will convene on Sunday, May 16, 1943, at the same location, and arrangements for that purpose have been completed, according to Chairman Paul.

## Osteopathic Hospital Association

Under the leadership of L. W. Jamieson, Chairman of the Hospitals Committee of the Society, a meeting of representatives of all osteopathic hospitals in the State was called and held at Algona on Sunday, September 12, and the Iowa Osteopathic Hospital Association was organized, as a unit of the Iowa Society of Osteopathic Physicians and Surgeons.

## Public Education

Harold D. Meyer, Chairman of the Public Education Committee, in co-operation with J. R. Forbes, Chairman of the Fiftieth Anniversary Celebration of Osteopathic Education, is now mailing to some four hundred legislators, candidates for the legislature, and judges, the formal announcement of the Fiftieth Anniversary Celebration which contains a brief educational presentation on "Osteopathy Today."

## Board of Trustees

The Board of Trustees held its second meeting of the fiscal year at Hotel Fort Des Moines, on Sunday, August 30, 1942. All members of the official family were present. Many important matters were considered and determined.

## Membership to Those in Armed Forces

All osteopathic physicians of the State who were members of the Society during the last fiscal year and are now in, or may subsequently enter, the armed forces of the nation were granted gratuitous membership in the Society for the duration of the war by the Board of Trustees at its last meeting.

## Questionnaire

Pursuant to direction of the Board of Trustees a detailed and comprehensive questionnaire will soon be mailed by the Society to all members of the Iowa profession for the purpose of obtaining

information essential for the profession's "all out" contribution to the war effort. Your prompt cooperation in filling out and returning the questionnaire to the office of the Secretary is urged by the Board of Trustees.

## The Iowa Osteopath

The Society will begin publication of its own official newspaper, the "Iowa Osteopath," within the next sixty days, according to present plans.

## Applications for Membership

C. R. Barry, Alexander.

Anna E. Gelandier, Manilla.

Lester J. Swift, Monticello.

R. C. Rogers, Hubbard.

M. B. Landis, Des Moines

C. W. Peterson, Fertile.

Dwight S. James,  
Sec.-Treas.

## LYMPHATICS

(Continued From Page 2)

## Lymph Flow

In a quiescent limb a very slight movement of lymph may occur; however, the lymphatic vessels are essentially dependent on other bodily activities for the propulsion of lymphatic fluid. Several factors influence the flow of lymph in varying degrees. These include: (1) Pulsation of blood vessels, (2) massage, (3) passive motion, (4) muscular activity, (5) Cardiac activity, (6) intestinal peristalsis, (7) increased venous, but **not increased arterial pressure**, (8) **heat plus massage or passive motion**, (9) oxygen decrease to 75% of the normal blood content, and (10) carbon dioxide increase to 10 volumes per cent. With these several agents continuously modifying the rate of lymph production, absorption and passage through lymphatics, the net rate of flow must be variable. The average of several measurements in human beings of thoracic duct flow is less than 1.5 c.c. per minute.

The rate of lymph flow, and therefore, the rate of lymphatic return to the blood stream depends directly on the lymphatic pressure and indirectly on the several factors mentioned above. Of particular interest is the thoracic duct pressure because the physiological capacity of the thoracic duct is, in a sense, the indicator of lymphatic behavior in the thoracic as well as abdominal cavities. The pressure in dogs has been found to average approximately 11 mm. Hg. and this was increased more than twice (26 mm.) under conditions of forced breathing. Beck, also experimenting in this field, concluded that "lymph pressure is influenced readily by pressures applied from without the lymphatic system such as pressure upon the abdomen or marked change in the intrathoracic pressure." The entrance of lymph into the subclavian vein (dog) is further facilitated by a gradient of pressure between the thoracic duct and the recipient vein. Rouviere and Valette found thoracic duct pressure to be 5 mm. Hg. and that of the internal jugular to be approximately 2 mm.

## Lymphoid Tissue

In the cold blooded vertebrates lymphoid tissue is absent. It begins to appear in birds, and the tendency in mammals, which have exploited the possibilities of this tissue to the greatest extent, is general and wide distribution throughout the body. The functions which the tissue serves in the healthy body are not clearly understood, nor is it clear whether the entire mass of lymphoid tissue throughout the body acts as a single "organ". The virtual impossibility of total extirpation of lymphoid tissue and the conflicting results observed after partial extirpation indicate that these problems will not be settled for some time. There are indications, however, that the following functions are served by lymphoid tissue: (1) Production of lymphocytes, and the lymphocytes reach the blood stream almost entirely by way of lymphatic vessels; (2) metabolism and transport of protein and fat; (3) vitamin storage; (4) elaboration of internal secretion; and (5) destruction of red cells. Because of the close association between the lymph cells and the reticular cells in a lymph node, it is often impossible to assign to either group any particular function.

Of these functions, elaboration of an internal secretion is most questionable and will not be discussed. Destruction of red cells is probably a mechanical phenomenon, followed by active phagocytosis accomplished by the reticulo-endothelial portion of the lymph node. Vitamin storage is open to some question. It has been observed that lymphopenia occurs during hypovitaminosis A and hypovitaminosis B, though the latter finding is not significant because it was observed before the several components of the B complex were isolated. Vitamin D has been said to exert an inhibitory effect on lymphoid tissue, but also here contradictory evidence is available. Lymphoid tissues in general have a high vitamin C content, but this is explained on the basis of the rapid metabolic rate due to ordinary mitotic proliferation in the nodes. The most clearly perceptible role of the lymph nodes is lymphocyte production, but a discussion of the physiology or ontogenetic relationships of the lymphocyte cannot be discussed here.

Lymph nodes show an increase in size following a diet of high caloric content, particularly if it is rich in fat. After periods of starvation the nodes undergo a remarkable involution, which is almost instantaneously counteracted by a high caloric diet. Fat is retained to some extent in normal lymphoid tissue, but lymphocytes have not been observed to ingest fat particles, pointing probably to the role of the reticulo-endothelial cells in fat storage.

Protein likewise has a stimulatory effect on the lymphopoietic tissue. Parenteral administration of protein results in a lymphocytosis and a general lymphoid hyperplasia. This suggests the possibility that lymphocytic re-

sponse in a period of chronic infection may be simply a generalized response of lymphoid tissue to the foreign protein present. The fact that similar increases in lymphocytes both in blood and lymph nodes followed injection of killed *Streptococcus* and *Hemophilus pertussis* cultures would seem to support this viewpoint. The application of such a principle in health is probably of limited value, however, because of the limited quantity of protein which would reach the blood stream unchanged.

## Lymphoid Tissue in Disease

In 1860 Virchow proposed the "barrier theory" of lymph node function, pointing out the filtering efficiency of lymph nodes. His reference to cancer of the breast is interesting. "When an axillary gland becomes cancerous, after previous cancerous disease of the mamma, and when during a long period only the axillary gland remains diseased without the group of glands next in succession or any other organs becoming affected with cancer, we can account for this upon no other supposition than that the gland collects the hurtful ingredients absorbed from the breast, and thereby for a time affords protection to the body, but at length proves insufficient, nay, perhaps at a later period itself becomes a new source of independent infection to the body, inasmuch as a further propagation of the poisonous matter may take place from the diseased parts of the gland."

This aspect of Virchow's theory remains unassailable even at present. It has, however, been extended with increase in knowledge of bacteria, to include the lymph nodes as sites of antibody formation. That the extension is particularly justifiable is without question; that the nodes are the sole, or even the main site of antibody formation is without foundation. The efficiency of the filtering capacity of the nodes with respect to bacteria is determined by (1) number of bacteria, (2) lymph pressure, (3) virulence of the organisms, (4) massage of the node (including normal muscular massage), and (5) phagocytosis of bacteria and migration of the phagocytes. Available evidence, using the vaccinia virus as a criterion, indicates that viruses not only are not filtered but may even proliferate in lymph nodes which would thereafter act as a center of dispersal.

Contrasted with the power of filtration in the nodes is the ability of the lymphatic vessels to disseminate infective agents—at least to the location of the nearest lymph nodes.

In this brief review it has not been possible to enter into a detailed analysis of the entire lymphatic system. The reader is referred, therefore, for details of the material discussed and for discussion of additional problems to the monograph of Drinker and Yoffey, *LYMPHATICS, LYMPH AND LYMPHOID TISSUE*, Harvard Univ. Press, Cambridge, Mass., 1941.

—Hugh Clark, Ph. D.



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# THE LOG BOOK

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Volume 20

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NUMBER 10

## Cerebral and Spinal Concussion

### True "Shell-Shock"

Dorland in the nineteenth edition of his medical dictionary states: "Shell-shock, a condition of lost nervous control with numerous psychic symptoms, ranging from extreme fear to actual dementia, produced in soldiers under fire by the noise and concussion from bursting shells." The shell-shocked individual, however, may not present symptoms limited to the reactions of noise and concussion alone as single factors, so one must consider some inseparable conditions and associated injuries.

Shell-shock in its true sense should be applied to a condition which follows exposure to the forces generated by the explosion of powerful shells in the absence of any visible injury to the head or spine. The areal compression produced at the time of the bursting of a high explosive shell may reach ten tons to the square yard with a corresponding decompression. Pressure may be readily transmitted through the cerebrospinal fluid to all the neurones of the central nervous system, producing by concussion, slight and temporary, but definite changes in the central nervous system resulting in a temporary loss of function.

Multiple punctate hemorrhages were found in the white matter of the brain, on postmortem examination, of men blown up by high explosives, who died without gaining consciousness. Chromatolysis with eccentric nuclei of the nerve cells of the medulla were also found, especially in the cardiac and respiratory nuclei. The corpus callosum, internal capsule and the cerebral peduncles were the areas where most of the multiple punctate hemorrhages were noted. The delicate lymph channels may be ruptured by the sudden dispersion of the cerebrospinal fluid with injury to the adjacent tissues.

Some French observers found that the cerebro-spinal fluid contained albumin and blood with a small increase in lymphocytes and increased fluid pressure, if the puncture were made within a few hours of the onset of symptoms on a man concussed by a shell explosion. These findings were not present if the puncture was repeated forty-eight hours later. When the lumbar punctures were made at a base hospital the cerebrospinal fluid was almost normal.

It is quite obvious then that in some of these cases the organic

(Continued on Page 3)

## 50th Anniversary of Osteopathic Education

*Celebration Held October 2, 1942*

The Anniversary Ball was held in the Grand Ball Room of the Hotel Fort Des Moines, with music by the Paramount orchestra. The dance was sponsored by the Student Council of Des Moines Still College of Osteopathy.



Dr. H. G. Harmon

At the 50th Anniversary Banquet the program was:

Toastmaster, Mr. Arthur Brayton, Convention Secretary, Des Moines Chamber of Commerce; Speaker, Dr. H. G. Harmon, President, Drake University.

The following guests were present:

Mayor John MacVicar, Dr. Walter Bierring, Adj. Gen. Grahl, Major Bennett; Colonel Halligan, Rev. J. L. Weertz, Mr. H. L. Horton, Prof. Geo. Huff, Mr. J. Newlin, Mr. Nelse Hansen, Mrs. Max Mayer, Mr. John Adams, Mr. Walter Yarn.

The dinner itself was excellent and the menu follows:

Fresh fruit supreme, celery hearts, radishes, olives, roast maplecrest turkey, giblet gravy, candied sweet potatoes, new peas, braised lettuce, cauliflower au gratin, mixed green salad, rolls, muffins, 50th Anniversary ice cream, coffee.

## CONTINUOUS SCHEDULE--TRIMESTER SYSTEM

*New Semester Opens on  
October 19th*

O. EDWIN OWEN, D.O., Dean

Never before in the history of our country have physicians been called upon to render so vital a service as that which is their responsibility today in guarding the health of the armed forces and the civilian population.

Des Moines Still College of Osteopathy is bending every effort to bolster the ranks of Osteopathic Physicians and Surgeons by operating on a continuous war emergency schedule. Summer vacations have been eliminated, permitting three semesters of eighteen weeks in rotation. The standard four year course is now presented in three year's time. There is no shortening of courses or lowering of standards; in fact, more extensive courses have been added to the curriculum in preventive medicine, public health and sanitation, military medicine, Red Cross first aid instructor courses, and tropical medicine.

Those young men and women who have completed two years of premedical college work can make no better use of their talents than to enter training now to become Osteopathic Physicians and Surgeons.

There is still time to enroll with the October 19th class. The college is prepared to answer your inquiries promptly so that no time will be lost.

## The Kenny Method of Treatment for Infantile Paralysis

A few weeks ago Miss Kenny came to Des Moines for the purpose of opening a clinic for the treatment of infantile paralysis. The evening before the clinic was officially opened a banquet was given at which she was the honored guest.

Following the dinner she gave a talk describing her method of treatment for infantile paralysis and compared the results of her method with the usual way of treating such cases. In order to explain some of her remarks more clearly, a film taken of the work done at the Minneapolis General Hospital the past two years was shown. This was very helpful as it enabled us to see how some of the patients were examined and treated by her at that institution.

Her method of treatment differs from the orthodox method of treating infantile paralysis in that she begins treatment during the acute stage, in fact she starts

(Continued on Page 2)

## Commencement Program

Graduation exercises for this semester's Senior A's will be held October 16, 1942 at the St. John's Lutheran Church. The program is as follows:

Processional .....  
.....Mrs. Samuel B. Garton  
Invocation.....Rev. G. P. Krebs  
Selection.....Mr. Kenneth Gfeller  
Address.....Dr. R. C. McCaughan  
Selection.....Mr. Kenneth Gfeller  
Presentation of Class .....  
.....Dr. O. Edwin Owen  
Dean  
Administration of Oath .....  
.....Dr. John P. Schwartz  
President  
Conferring of Degrees .....  
.....Dr. John P. Schwartz  
President

Recessional .....  
.....Mrs. Samuel B. Garton

The graduating class includes ten members and is the first class to receive diplomas at the end of the recently instituted third or summer semester. The ten new Doctors of Osteopathy are:

Roger Banks Anderson, Robert Corwin Bennington, Cyril John Louis Des Lauriers, William Meyer Diem, John Crawford Halley, Jr., Emma Louise MacAdams, Richard Oliver McGill, Louis Martin Radetsky, Earle Gordon Sperry, Ronald Kent Woods.

## Fraternities ATLAS CLUB

Sunday, September 20, the Atlas pledges and their wives met with the membership Committee for a picnic in the wilds of Waterworks Park. Kenneth Schwab was elected head (Noble Scum) of the pledge class. Mid hamburgers and hilarity the group decided to make such meetings a regular feature throughout their pledge-ship.

In honor of our only graduating member, Ronnie K. Woods, a Senior Banquet was held in the Green Room of Hotel Fort Des Moines, September 30. Alumnus Dr. Harry Marshall was the toast-master and Dr. Fred Campbell gave the address which was an excellent presentation of the problems confronting Osteopathy in connection with the war. The Atlas club congratulates Ronnie and extends its best wishes for his success. Brother Woods has served very capably as our Noble Skull this semester and has always been a credit to our organization.

The officers for the next semester are:

Noble Skull, Jack Price; Occipital, Joseph Cullen; Pylorus, Robert Patton; Stylus, Carl Nagy; Sacrum, Scott Heatherington; Receptaculum, Vernon Stoner; Styloid, Paul Senk.

—G. A. D.

## ITS

The Beta Chapter of Iota Tau Sigma has just closed its semester of highly successful activities by having the semi-annual senior banquet at Hotel Kirkwood, October 8, honoring its graduating brothers who will soon leave the active ranks to become alumni. These men are: R. Bennington; C. DeLauries; and J. Hally.

The affair was recorded the largest and finest in the Chapter's history by the consensus of opinions. Among those present were: Drs. Cash, Sloan, Kale, Englund, their wives, and Drs. Golden and Sorenson.

Our guests for the evening were the Delta Omega Sorority, wives and lady guests of the brothers.

Our president, Frank Nasso, had the unusual distinction to have as his guest of honor, none other than the charming president of Delta Omega, Miss Mary Toriello.

The evening was highlighted by musical renditions and climaxed in fine spirits for everyone.

Every member extends congratulations to our parting men, may they well be successful in all they undertake.

Keep 'em Flying!!

—F. J. N.

## Birth

Mr. and Mrs. Joe Cullen announce the birth of a baby daughter weight 9 lbs. 13½ oz., on October 3, and named Colleen Kaye by the parents who are both doing well. Joe says he is glad it happened before final tests since if he flunks out of Still the baby won't have a D.O. for a daddy.

## ΨΣΑ

With the termination of the summer semester, Gamma chapter of Psi Sigma Alpha has elected a new group of officers and honored its graduating seniors.

On Sept. 22 at the P.S.G. house the following men assumed guidance of P.S.A.'s future activities: Hal Beals, President; Carl Waterbury, Vice President; Jim Booth, Secretary; Dick Bayne, Treasurer; Gerry Dierdorf, Corresponding Secretary; Charles Schultz, Reporter.

Wednesday night, Oct. 7, at Younkers Cremona Room, the Chapter bade farewell and good luck to its members about to enter practice: Ronald Woods, Roger Anderson and Lou Radet-sky.

P.S.A. wishes to congratulate all the new freshmen and wish them well in the vital work which they have chosen to undertake.

—C. S.

## ΦΣΓ

At the last regular meeting of Delta Chapter of Phi Sigma Gamma, Brother Henry Shade was voted the new president to replace Brother Glenn Deer who has just completed a very successful term. The other new officers are: Vice President, Roland Miller; Secretary, Herb Harris; Pledge Master, Jim Crane; Treasurer, David Heflin; and Sergeant-at-Arms, Eugene Sheldahl.

To replace the traditional senior banquet this year the chapter will honor its solitary graduating senior, Brother Roger Anderson, at a noon luncheon at Younker's Tea Room on October 16. This will be an especially fine send-off for Brother Anderson as his life membership certificate will be presented to him by the Grand Archon of Phi Sigma Gamma, who will also be a guest at this luncheon. The Grand Archon is making his routine chapter inspection tour and we feel fortunate in having him here for our Senior Luncheon and the Graduation exercises.

The chapter sends its best wishes to Pledge Jim Allender and his wife on the birth of their son, Jay Guy, at Des Moines General Hospital, Saturday, October 3.

—H. G. H.

## AOF

This last week of school finds examinations winding up the end of an interesting semester.

We extend congratulations to Art Abramson upon his recent marriage. May happiness and success ensue. Art is overflowing with joy, and we rejoice with him.

On this 50th year of osteopathic education, we as a fraternity, feel fortunate to be members of the most progressive profession in the world. The banquet commemorating the 50th anniversary of Osteopathic Education, we feel, was the most dynamic tribute to Osteopathy seen in this state. The committee in charge of arrange-

ments deserves the highest commendation.

Congratulations to Lou Radet-sky upon his graduation from this school, Oct. 16, 1942. Good luck to him and the rest of his class.

## Alumni Notes

The Alumni association is 100% behind Dr. Roger's plan to have each graduate of Des Moines Still College contribute \$1.00 per month to the Alumni Association Fund. This Fund is to be used to help the College finance its extension program and establish a hospital clinic.

During and immediately following this war we are bound to go through trying times in the College for reasons which are obvious. Therefore the need of this fund is very great.

We had a very enthusiastic meeting in Chicago at our annual convention and the response since to Dr. Roger's plan has been very encouraging. But we need to go much further. There is no reason why this should not be 100% subscribed by our alumni. There is not one graduate of Des Moines who can not afford \$1.00 a month to this cause. You can not help a more worthy cause.

If your school is forced to close, you will be the one to suffer most. A Doctor without an Alma Mater is the worse kind of an orphan. Des Moines Still College gave you a training that enables you to practice and make a name for yourself. If you paid what you owe Des Moines Still College you would be sending them not one but ten dollars or more a month the rest of your life.

So let's get a little conscious-stricken, send me your dollar for your annual dues and in addition send a dollar each and every month to Des Moines Still College Alumni Association, 710 Clinton Avenue, Des Moines, Iowa. Then next March deduct the whole thing from your income tax. If you don't give it to us you will have to give it to Uncle Sam anyway.

Let our slogan be 100% membership.

Fraternally,  
Lloyd Woofenden, D.O.  
802 Murphy Bldg.,  
Highland Park, Mich.,  
Secretary-Treasurer.

## Marriages

The Log Book is glad to hear of the marriage of Edythe Gates, D.O., and Jess S. Varner, D.O., class of '41, Still College; the wedding was last March and Dr. Jess Varner is now serving in the army, being stationed at present at Camp Grant, Illinois.

\* \* \*

Since all the folks back home know now, the editor can reveal formally his marriage, on June 16, to the former Miss Miriam Smith of New Castle, Pennsylvania. Mrs. Raub is now spending a two weeks vacation here in Des Moines with her lucky husband.

## Kenny Method

(Continued from Page 1)

treatment just as soon as the disease has been diagnosed. She does not use massage, splints or braces of any kind, or a respirator, but instead uses hot fomentations, passive movements of the joints, and muscle re-education.

This treatment was developed by Miss Kenny while caring for patients suffering from infantile paralysis in the "bush" country of Australia. She worked for many years with these cases and through her keen observation of changes taking place in the muscles of the body was led to the belief that the disease, infantile paralysis, in the acute stage affects not only the anterior horn cells but also adjacent portions of the spinal cord. That is, it may spread through the segment of the cord so that symptoms other than those due to the involvement of the anterior horn cells must be present.

Before discussing her method of treatment, let us spend a little time on the symptoms and pathology for it will make it less difficult to understand this new method of treatment.

According to Miss Kenny, the main symptoms are spasms and shortening of the affected muscles; coordination is frequently replaced by incoordination; the patient frequently loses power in the non-affected muscles because the affected muscles are pulling the non-affected muscles from their normal resting place and retaining them in this lengthened position through the unrelaxed spasm in the affected group; and the non-affected muscles frequently refuse to contract due to an interference between the higher and lower centers.

In the above group of symptoms there are three outstanding factors which distinguish the Kenny concept of infantile paralysis; namely, muscle spasm, incoordination, and "mental alienation."

Muscle spasm is a physical condition of a skeletal muscle, characterized by firmness, tenderness, prominence, and pain when stretched due to its incomplete relaxation.

In her discussion of the muscle spasm, Miss Kenny stresses the point that the spastic muscles are the ones that are most affected by the disease in the central nervous system, and acute anterior poliomyelitis should be classed as a spastic paralysis rather than a flaccid paralysis. The spastic paralysis develops first, the flaccid paralysis is secondary, developing as a result of the spastic paralysis. If the muscles on the posterior surface of the leg are in a spastic state, then the muscles on the anterior surface of the leg will show the flaccid paralysis.

Miss Kenny considers the flaccid paralysis as mostly, if not en-

(Continued on Page 4)

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Lester Raub, B. S.

Advisor.....J. P. Schwartz

Osteopathy Without Limitation

## Cerebral and Spinal Concussion

(Continued From Page 1)

changes in the central nervous system were so slight that the probable minute capillary hemorrhages and chromatolysis of the nerve cells rapidly and completely disappeared.

The cerebral symptoms of concussion in uncomplicated shell-shock are the same as those of concussion in civil life. The immediate effect of a high explosive shell is to render a man unconscious, instantaneous death may occur. Breathing is stertorous in the severest cases and death may follow within a few hours or days without regaining consciousness. In serious cases where ultimate recovery takes place, the patient passes into a condition of stupor being wholly unconscious of his surroundings. He may swallow and even chew the food that is given him but does not speak and apparently does not hear or see. The pupils may react poorly to light or not at all. He usually lies inert and incontinent. After a few hours he changes into a dazed condition from that of complete insensibility.

Automatic acts may be carried out in an apparently normal manner and then find himself miles away from his unit with no knowledge of his actions or how he covered the distance. This condition should not be confused with acute confusional insanity or the stupor that occurs as a result of emotional strain without any concussion, following the explosion of a shell. The first condition may be determined by checking with his unit or by observation for a time, until his memory returns. In the latter, the stupor following emotional strain comes on gradually and is not associated with any change in the cerebral-spinal fluid or followed with severe headaches. The stupor may be indistinguishable from the stupor following an epileptic seizure.

The stupor following complete insensibility may vary from a few minutes or hours to several days, it rarely lasts more than a week, when it may pass off with the patient having no recollection of the intervening events.

His memory up to the time of the explosion soon recovers and he may even recall the sound of the coming shell, but the following moments remain a blank. He may live the terrifying events in a dream and forget them again on waking. A retrograde amnesia may be present, forgetting his identity and his entire previous life, his faculties however which

## STILL COLLEGE CLUB

### HAVE YOU JOINED YET???? . . .

This club is something new and something hot. . . . It's less than six weeks old and has 135 members with new ones coming every day. . . .

The purpose???? To put the Teaching Clinical Hospital on a functional basis by providing funds to the Public Relations Committee of the National Alumni Association.

Dues???? One (\$1) dollar per month. Anyone with a buck may belong. We even pay the postage.

*Details available upon request . . .*

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P. E. K., D. O.

have become automatic as a result of years of practice are not forgotten. He is still able to read, write, talk, dress and feed himself.

A lethargic state may exist for a time during which very little if any interest is taken in events happening around him. He may, however, obey simple commands with a delayed action; the symptoms closely resemble dementia praecox. Complete recovery, however, eventually occurs.

Headache is invariably present, but as long as the patient is in a semi-conscious or dazed condition as a result of the shell-shock, he may have only a heavy uncomfortable feeling of the head; the severe pains, however, do not register until his mind begins to clear up. The smallest mental effort increases its intensity, it is frequently worse at night and often prevents sleep. The pain appears to be more severe in the back of the neck and in the region of the occiput. After the severe headache leaves, a dull uncomfortable feeling still exists and varying intensities of cranial discomforts return with the slightest degree of excitement or any activity or exertion which one may undertake, even in a conservative way. Concentration and sustained attention are impossible because of the sense of the extreme weariness they cause. Decisions are difficult and brain function is poor, and oft times a source of considerable worry.

Mental irritability is very common and self control is difficult; fatigue is readily felt with very little, if any, desire to exert himself physically or mentally.

The evanescent changes in the central nervous system resulting from concussion, caused by areal compression, may have additional concussion injuries caused by flying missiles, falling objects, or the striking of the head, after being tossed about by the explosion itself. These injuries may prove to be a more serious type of injury than the concussion from the areal compression.

Spinal concussion disturbances are generally due to injuries sustained from flying missiles or pressure from falling objects with

or without evidences of skin and muscle injuries.

Some cases have been examined where men were suffering from spinal concussion while still in the trenches and within a few minutes of being injured, the following symptoms were noted: the cutaneous reflexes were absent, except the plantar, which was extensor. The tendon reflexes were exaggerated and extreme hypotonus of all muscles was present. In slight cases the hypotonus passed off in a few hours with the patient still unconscious, the legs developed a slight spasticity with a normal or increased knee jerk with the plantar reflex absent or flexor. In more severe cases there is a diminished muscular tone for a longer period of time, and a marked flaccidity may persist, with an absence of the knee and ankle jerks. In time the tone returns, the normal jerks are noted and the paralysis disappears.

In the profound changes in the cord, the flaccidity is replaced by increasing spasticity with extensor plantar reflexes, ankle clonus and increased knee jerks; most cases completely recover. In some, permanent lesions of the spinal cord from concussion may occur. Occasionally the extensor reflexes persist, with slight spasticity of the leg muscles and an increased knee jerk.

Anaesthesia or analgesia, partial or complete, over varying areas may be found. The milder cases affect the feet or legs only. The more severely involved cases may reveal sensation disturbances extending as high as the cord segment involved, when the knee jerk is absent. X-ray may show no sign of injury even though the spine may show some rigidity with tenderness and pain on motion or bending. There may be a girdle of increased sensitiveness to pain at the upper limits of the area of diminished sensation.

The patient may be incontinent for a few hours, followed by a retention or difficult micturition for a few days but shortly normalizes.

In the treatment of these cases of concussion of the brain or the spinal cord, complete rest in bed is one of the most essential factors for recovery. Chronic head-

aches following cerebral concussion and persistent backaches after spinal injuries so frequently found in civil practice could have been prevented by sufficient rest in bed after the injury. The same is true after true shell-shock and after spinal injuries from burial. Many men who received all kinds of treatment in going from one hospital to another with practically no benefits could have been cured with rest immediately after the injury.

One must bear in mind that if a patient is kept in bed for too long a period of time, he may lose his power of walking and create the impression that he is severely injured and develop a hysterical complex or a paraplegia. When the patient no longer complains of pain in the head and back and no symptoms of stupor are evident, limited activity may be granted, such as bathroom privileges. When this is well tolerated with no unfavorable symptoms, appropriate but conservative exercise should be started.

Many of us may be eager to try osteopathy on these cases. Its results are not always beneficial. Many medical writers state that massage often aggravates the pain. As a comment from one that suffered a cerebral concussion with a prolonged recovery, we can state that massage or manipulation of the neck or spine produced excruciating pain over the occipital area and at the point of cranial injury. According to the amount of manipulative work done, the pain would persist from a few hours to a few days without the slightest let up.

Stupor and amnesia usually require no special treatment. The stupor disappears spontaneously and complete recovery from the amnesia soon follows. It is considered unnecessary to make any attempt to restore the lost memory when partial amnesia persists. The blank in the memory is usually for a short period of time and may be a benefit to be unable to recall unpleasant events.

A more or less complete retrograde amnesia may require active treatment if there are no signs of it disappearing after the patient's general condition is well improved. Hypnosis is the only treatment that has been reported which has any effect. Forgotten facts and other details may be described and their names written during hypnotic sleep, which at first means nothing to them when awake. Patience and perseverance are required to restore their memory.

The hysterical symptoms following concussion are a study in themselves. Hallucinatory delirium of a hysterical type was a rather frequently observed symptom of the shell-shock victims. The emotional upheaval must be intense, as in war, to break down the self control of some men, and the "break down" can be expected because of the severe fear and extreme fright accompanying the acts of war. This can affect any type of person.

The disorders of the nervous system that arise out of fear and  
(Continued on Page 4)

## I. S. O. P. S.

**Smallpox-Diphtheria Campaign**

D. E. Hannan, Chairman of the Department on Public Affairs, recently submitted to the Iowa State Department of Health, the Society's plan for participation of the members of the osteopathic profession in the Department's state-wide smallpox and diphtheria immunization program and approval was promptly granted by Walter L. Bierring, Commissioner. The campaign will be held during the week of November 9.

Information and material pertaining to the program will be personally distributed, to those attending the fall District meetings, by President Golden. Those physicians not attending the meetings will be mailed the necessary literature.

**District Meetings**

As this issue of the *Log Book* goes to press, President Golden and Dr. W. J. Huls are attending the District meetings. President Golden is addressing each meeting on the subject "State Affairs," and Dr. Huls is lecturing on "Osteopathic Technic."

**Board of Trustees**

The third meeting of the Board of Trustees for the present fiscal year will be held at Hotel Fort Des Moines, Des Moines, on Sunday, November 15, 1942.

**Osteopathic Hospital Association**

The following were elected officers of the Iowa Osteopathic Hospital Association, at its organization meeting at Algona, on Sunday, September 12: L. W. Jamieson, President; W. D. Andrews, Vice President; and Dwight S. James, Secretary-Treasurer.

The Association has adopted articles of incorporation which are recorded in the office of the Polk County Recorder, Des Moines, and has also adopted by-laws.

**Quad State Osteopathic Association**

The Quad State Osteopathic Association, comprising the States of Iowa, Nebraska, South Dakota and Minnesota, announces that it has cancelled its fall meeting, special attention having been given to statements issued by the Office of Defense Transportation, the War Department, the Navy Department, and other governmental agencies concerning the holding of conventions and consideration also having been given to the call that would be made on the time and work of physicians involved.

**Radio Committee**

Paul E. Kimberly, Chairman of the Radio Committee, announces the resumption of public service broadcasts once each month by radio station KSO, Des Moines, beginning the last week in October and continuing until next June.

**Public Education**

Harold D. Meyer, Chairman of the Public Education Committee, will mail during the present month the booklet "Surgery as Taught and Practiced in Ap-

proved Osteopathic Colleges and Hospitals Affiliated for Teaching" to four hundred legislators, legislative candidates, other state officials and judges in Iowa.

**American College of Osteopathic Surgeons**

J. P. Schwartz, President of Des Moines Still College of Osteopathy, spoke at the fifteenth annual clinical assembly of the American College of Osteopathic Surgeons, October 10 to 15, in Kansas City, Missouri. Byron Cash, professor of roentgenology at Still College also was on the assembly program.

**Fifth District Picnic**

Osteopathic physicians and their families from the Fifth District enjoyed the hospitality of Dr. and Mrs. B. W. Jones at a picnic dinner and program at their summer home on Spirit Lake, Sunday, September 13. The cafeteria dinner made up of baked Walleye Pike and all the trimmings was enjoyed by the guests at tables set up on the lake shore.

**Civilian Defense**

G. A. Whetstone, trustee, has recently been appointed Chief of Emergency Medical Service of the Wilton Junction Civilian Defense Council.

**George C. Keays Appointed Examining Physician**

George C. Keays, Gravity, has been appointed camp physician (examining physician) for the Royal Neighbors of America, Conway, Iowa, Camp No. 5252.

**Applications for Membership**

A. W. Dennis, Des Moines.  
Walter S. Swift, Keokuk.  
Charles L. Hall, Lakota.  
E. J. Luebbbers, Des Moines.  
Roger B. Anderson, Des Moines.  
Ethel Boyd, Spencer.  
C. O. Meyer, Des Moines.  
Ira L. Christy, Farmington.  
Oscar DuBois, Oskaloosa.  
—Dwight S. James, Sec.-Treas.

**Cerebral and Spinal Concussion**

(Continued from Page 3)

fright are not always proportionate to the severity of the physical injury. So it can readily be noted that the hysterical or anxiety symptoms are often superposed on physical injuries.

In uncomplicated cases of true shell shock, recovery often occurs with remarkable rapidity. The majority of light cases never reach a base hospital or never get sick at all. When severe symptoms do develop they are generally the result of hysterical manifestations becoming grafted upon the organic changes of shell-shock, caused by areal or direct concussion. In the confused mental condition which follows shell-shock and exhaustion from stress and strain of active service, a man is abnormally suggestible. The organic paraplegia, the result of concussion injuries of the cord soon disappears with the return of the spinal cord to its normal condition, and a hysterical paraplegia has replaced it. With the paralysis at first organic which he discovered when coming out of his stupor, he accepts his paralyzed state and makes no subsequent effort to move his limbs.

He then carries on, in a pseudo paralyzed state, which can only be corrected by persuasion and suggestion. Likewise an initially organic hemiplegia easily merges into a hysterical hemiplegia which at times has been cured in a few minutes by simple psychotherapy.

It is extremely difficult so long as any organic signs persist to judge to what extent the symptoms are organic in origin. An attempt, however, should be made as soon as the initial stupor has passed away to persuade the patient to walk.

It has been stated that some physical signs of organic disease such as an extensor plantar reflex, a greatly exaggerated knee jerk, and true ankle clonus and unilateral absence of the abdominal reflex may still be present when the character of the gait and its rapid improvement with persuasion and re-education shows that the symptoms are almost entirely hysterical.

In summarizing the findings in shell-shock, it can be stated that definite injuries to the central nervous system occur and the severity varies with the amount of areal compression and decompression produced by the bursting shells.

That associated injuries, direct or indirect, may be coexistent; and mental and hysterical symptoms may be superposed on conditions that are a direct result of injuries.

That those who survive show changes in the cerebrospinal fluid for twenty-four to forty-eight hours, pass from unconsciousness of varying length, through a period of stupor, a lethargic state, varying types of amnesia and headaches of different durations of time and intensity with eventual recovery.

That nervous disturbances are evident and mental irritability is noted. Mental and physical fatigue is readily felt, concentration is difficult and there is very little desire for exertion.

That the injuries of war are the same as those resulting from brain and cord injuries in civil life, requiring rest in bed with appropriate care until all symptoms of the cerebral and spinal cord injuries have subsided.

That the superposed nervous disturbances and hysterical manifestations must be corrected by re-education, suggestion and persuasion.

For additional information and case histories of the various types of disturbances mentioned, I refer you to the book "Medical Diseases of War" by Sir Arthur Hurst.

—R. B. Bachman, D.O.

**Kenny Method**

(Continued from Page 2)

tirely, functional in nature rather than due directly to the disease in the central nervous system. If one group of muscles is in spasm and cannot relax, the antagonistic group is prevented from fully contracting due to the brake-like action of the spastic muscles; any attempt at contraction of the non-spastic group

stretches its antagonistic spastic group and increases the spasm and pain; a fear complex is set up and the patient refrains from using his non-spastic group; a functional breakdown between the brain-control and the non-spastic group develops and the non-spastic muscles undergo a flaccid paralysis. Miss Kenny believes that the patient loses his mental awareness of these flaccid muscles, and the flaccid muscles becomes "alienated" from their brain control. She teaches patients to use flaccid muscles merely by restoring the patient's mental awareness of those muscles and thus correcting their alienation.

Contrast the above discussion of paralysis of poliomyelitis with what has been generally accepted by the majority of physicians who discuss this disease. They have said that when the anterior horn cells motor or cranial nuclei are involved we have a flaccid paralysis because of the destruction of the nerve cells in the gray matter of the central nervous system; therefore, no impulses will reach the muscles normally supplied by these nerve cells. We now know that such a condition rarely occurs.

Pathologists, for a number of years, have discussed certain early changes of anterior poliomyelitis. These changes are edema, perivascular infiltration, petechial hemorrhages and the direct effect of the virus on the anterior horn cells. The first three alter the nutrition of the cells and probably their function, but it is only temporary. The action of the virus on some of the neurons may be totally destructive, causing permanent loss of function, while on others it may cause only temporary damage, the cells after a period of time regain their normal function. If we knew more about the pathologic physiology of the central nervous system in poliomyelitis or of the affected musculature, we probably would appreciate to a greater extent Miss Kenny's discussion of the symptoms and treatment of this disease.

The newer knowledge of the pathology of poliomyelitis indicates that it is an encephalopolyomyelitis and ganglionitis. The lesions of the brain are just as much a part of the disease as are the lesions of the cord. The areas in the brain, most commonly showing the severe lesions are the vestibular nuclei and associated cerebellar centers, especially the roof nuclei; the central gray matter of the mid brain; the thalamic and hypothalamic nuclei, and area 4 (motor area) of the neo-cortex but no other part of the cortex. Here we have the background not for a single, simple picture of flaccid paralysis, but for diverse symptoms and signs; for incoordination, for tremors, for variations in tonus, and for autonomic anomalies. Further we have here a background for transitory signs and symptoms, for temporary paralysis, possibly for that condition Miss Kenny has called "mental alienation."

Lonnie L. Facto  
(To be continued.)



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# THE LOG BOOK

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## WAR GAS POISONING

John B. Shumaker

The use of poison gas in warfare is not new. Its use dates back at least to the fifth century, B. C., when, in the Peloponnesian War., Archidamos ordered faggots impregnated with pitch and sulphur to be ignited outside the walls of a city. The wind changed, however, and the fumes came back into the faces of the besiegers. The attack failed. The British advocated the use of poison gas as early as 1812 but did not use it because it was against the principles of civilized warfare. In the first World War the Germans exploited modern gases, starting with chlorine, and later resorting to mustard gas, the sternutators, phosgene, and even the arsenical vapors. Mussolini employed gas successfully in the Ethiopian War when one of his Italian armies was in danger of being surrounded. The Japs have used Lewisite, an arsenical, in their war with the Chinese.

Poison gas is best employed as a defensive weapon, and serves to hamper the progress of an advancing army. The persistent gases such as mustard are most satisfactory in this respect, since they remain in a locality for many hours after the defenders have withdrawn from the area.

Despite the deadly character of most poison gases, the number of casualties from its use are surprisingly low, providing adequate protection, such as gas masks, is available, and common sense is applied. Total gas fatalities in the World War were only 2% of the total, and of these, mustard gas caused 8 times as many fatalities as all the other gases combined.

### Some Simple Precautions

1. Put on the gas mask when warned. Also put mask on a gas victim or adjust the one he is already wearing.

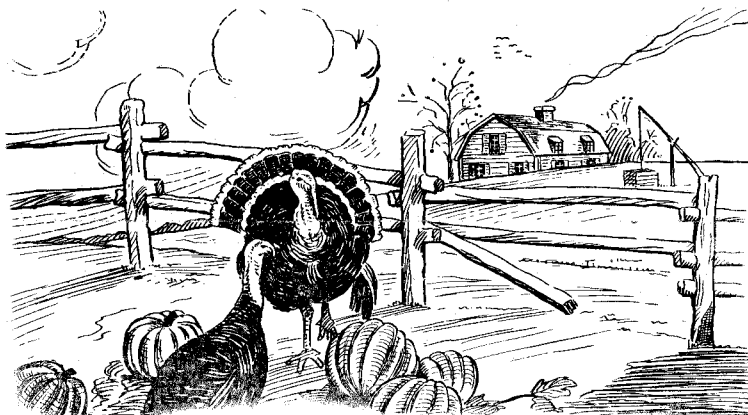
2. Move across the wind and up hill to escape the gassed area. Gases are heavier than air, and they drift with the wind. Stay away from basements, subways, and the lower floors of buildings. Try to get to the third floor if possible.

3. Learn the odors of the various gases and act accordingly. Keep cool and try to allay the fears of others. A gas panic is easily started, and casualties are greatly increased through fear.

4. Learn to know and to apprehend the weather condition which are best suited for gas attack and be prepared. Beware of cool, calm, cloudy weather.

(Continued on Page 3)

## Thanksgiving Issue



## The Kenny Method of Treatment for Infantile Paralysis

(Continued)

Incoordination, according to Miss Kenny is the second of the major symptoms of infantile



Dr. Lonnie Facto

paralysis, and is classed under two headings. First, that due to the spreading of motor impulses intended for a certain muscle to other muscles or groups of muscles due to such conditions as pain on attempted motion of the involved muscle or inability of that muscle to perform its proper function. Second, that occurring within the involved muscle itself so that ineffective contraction is produced instead of a coordination rhythmic contraction producing maximum motion at the insertion of the muscle.

Uncontrolled voluntary motion, when attempted in the presence of spasm, leads to the symptom of incoordination by the development of abnormal motion patterns and misuse of muscles. Active motion on the part of a patient un-

less carefully supervised and directed may do great harm, therefore, and lead to difficulties in securing the return of normal function.

"Mental Alienation," the third of the major symptoms of infantile paralysis, is the term used by Miss Kenny to describe a condition in which there is inability to produce a voluntary, purposeful movement in a muscle in spite of the fact that the nerve paths to that muscle are intact.

This is a physiological block which must be distinguished from the organic interruption resulting from destruction of anterior horn cells by the disease. There are several ways in which mental alienation may conceivably be produced, the most frequent are as follows:

1. A muscle is pulled beyond its normal resting length by its opponent which is in spasm.

2. A muscle may become "alienated" when pain is produced in its involved opponent by the attempt of such unaffected muscle to contract.

3. The spasm, or its later results, in an affected muscle may be so severe that the braking action or check on the normal opposing muscle may discourage the latter enough to produce "alienation."

4. The disease may produce changes in the nervous system which do cause loss of conduction power and interference with normal neuro-muscular action.

Muscles that are non-functioning due to "mental alienation" may remain permanently in this state unless treated.

An example of "mental alienation" not due to infantile paralysis, frequently seen by orthopedic surgeons, is the inability of some patients to contract the quadriceps after a knee operation or

(Continued on Page 2)

## Pursuit for a Reason

The mechanism of effects of an Osteopathic Lesion or of the expression of any symptoms must pursue one or more of these three channels: 1. Reflex arc disturbance, 2. Vaso-motor disturbance, 3. Intoxication by accumulated and perverted metabolic products. Always one, usually all, of these methods are operative in an almost incomprehensibly complex cycle in any lesion area or disease, not that the Osteopathic Lesion is not a disease in itself.

Of primary interest, however, is the nerve tissue; for no matter what mechanism is responsible for a lesion effect or a symptom, nerve tissue is the conductive system over which it operates. Hence a current knowledge of the anatomy and physiology of the vegetative nervous system is necessary. I say "current" for all that is known of nerve tissue anatomy and physiology and its reaction in disease is far from being all there is to know. Medical publication usually contains some new adaptation or application that has not been previously visualized, certainly not back in the days covered with must when many of our texts were laid to rest in time.

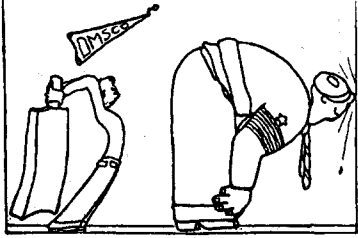
Involvement of nerve tissue by toxicity, trophic change and inflammation is not identified ordinarily by those simple terms. The terms neurosis, neuralgia, and neuritis are three distinct names that indicate a difference in degree of toxicity or inflammation of nervous tissue. Even these are not adequate and so neurosis is broken down to apply to each individual nerve, viscus, and each important symptom of mental aberration and glandular dysfunction. Similarly a multitude of neuralgias are recognized; and, of course, neuritis is usually applied to the area innervated by the nerve involved. This complexity of nomenclature indicates that involvement of nerve tissue is as varied as the symptoms it produces, as diverse as the number of individual nerves and their area of distribution.

Therefore, one of the problems of the next few papers will be an effort to establish a generalization regarding nerve tissue in order to clarify, if possible, the function of and involvement of nerve tissue in disease.

The progressive sequence of nerve tissue involvement is neurosis, to neuralgia, to neuritis, and

(Continued on Page 4)

# FRATERNITY NOTES



ΦΣΓ

Looking back over the interval between the last time Delta chapter of Phi Sigma Gamma reported, we can report one of the busiest months the fraternity has had in a long time. Among the most prominent occasions was the senior banquet at which we were honored by having both the Grand President of Phi Sigma Gamma, Dr. Blind, and the Grand Secretary-Treasurer, Dr. O. E. Owen. After the banquet Dr. Blind, a prominent surgeon in the osteopathic field, showed several films of his latest optical operations.

With the opening of the new semester, the usual and unusual rushing parties again take a prominent place in fraternity life. This year, because of the shortage of bachelor students, the Phi Sigs substituted for the traditional smoker a dinner to which the wives of the new students were invited to attend with their husbands. We always welcome the opportunity to become acquainted with the new students, and found it doubly enjoyable to meet their wives, too.

With all the above events out of the way, we are now looking forward to the fall initiation which will be held on Friday, November 13th, and Sunday, November 15th. On the Friday following the initiation, the chapter will hold a formal dance at the chapter house in honor of the new actives.

—H. G. H.

ΨΣΑ

Business was the theme of the Psi Sigma Alpha honorary fraternity meeting held Tuesday, October 27, at the Phi Sigma Gamma house. If plans are followed there should be a very interesting semester's work ahead.

A hearty welcome is expected to all the new freshmen.

—C. S.

ΔΩ

Since you last heard from us we have been busy indeed. We have had a meeting at the Pit with royal sparers for a feast, and our new pledge for company. Then there was that lovely Pledge Dinner and Senior Banquet combined out at Mrs. Doty's. At that time we honored our one departing senior, Emma MacAdams, much better known to all of us as just our Mac. Miss Sarah Jean Gibson also at that time received her welcome into the sorority as a pledge and at the present time she is carrying out certain duties of which the

students who frequent the Student Lounge are well aware! To continue on this banquet theme—we want to wish to our senior member, and to all seniors the best that can go with them as they leave us for further work in the field of Osteopathy. We know they will carry our torch high and prove that Osteopathy has a place in therapeutic values second to none. To Doctor Owen and Jack Price who made our banquet that evening more enjoyable by furnishing records and a player we want to extend our thanks. You should have seen the fun we had—and the expressions on those faces!

Before it is forgotten we'd like you to know that even with our small numbers we do have officers and they were installed at the same time of our Pledge and Senior Banquet. The honorable president is Mary Williams, the vice-president and recording secretary-treasurer is our vivacious Mary Toriello, and the corresponding secretary, escort and guard is the one who gives you these reports now—Mary Klesner. We will keep the sorority busy and useful as long as we are here, even though our number seems to continually diminish. Again the plea is heard — send us more girls!

A very pleasant meeting was held at the home of "the two Marys" a few evenings ago, and we found it a special pleasure at that time to begin educating our pledge to the mysteries of the organization with which she now has become associated. We hope that soon our plans for her initiation will be worked out and you may hear more of that in the next edition of the **Log Book**.

—M. K., corr. sec.

## Kenny Method

(Continued From Page 1)

other painful lesion of the joint. Sometimes re-education is needed for a prolonged period before normal control of the muscle is obtained in these cases.

Before taking up the treatment of infantile paralysis, I would like to say that there are a number of important questions that might be asked which have not been answered in this discussion; such questions as: whether the muscle spasm is of central or peripheral origin; whether the spasm is of inflammatory, toxic, or anoxicemic origin; the relation of muscle fasciculation to massive fibrillation; the peripheral circulatory factor; the relation of acetyl choline to the myoneural junction or end-plate; the relation of the myoneural junction to fatigue; the effects of decreased blood flow on the acetyl choline content; the influence of potassium ions; the question of organic paralysis and pseudo-paralysis; the pathologic changes in or around the sympathetic nerve cells in the spinal cord; the importance of the "cooling off" process between application of the hot fomentations. To attempt to answer these questions would lead us into a lengthy discussion which

is not called for at this time.

### Treatment

The Kenny treatment should begin just as soon as the diagnosis of infantile paralysis is made. The patient is put to bed and kept comfortable and relaxed in the normal anatomical position without splints or braces or any other forms of fixation which might lead to rigidity or stiffness of the joints, or aggravate the muscle spasm that is already present.

The mattress should be firm and supported by a fracture board between the springs and the mattress. A piece of wall board or other like material which is several inches longer than the width of the mattress for the purpose of tying it to the foot of the bed, and from twelve to eighteen inches wide and is held away from the mattress by two four-inch cubes of wood at the outer corners of the mattress is used. This leaves an open space between the foot of the mattress and the foot of the bed which is for the patient's toes or heels to rest in when he is lying on the back or face down. The foot board is for the purpose of allowing the patient to maintain the standing reflexes during his stay in bed and it is not in any sense a splint. The patient's position in bed is one that closely approximates the normal standing position with the body straight, the arms at the side and the legs in a straight line. He lies in bed between woolen blankets with a cotton drawn sheet under the head and another under the buttocks. The bed clothes covering the patient are carried over the foot board which serves the additional purpose of keeping the covers off the feet. A folded towel is placed under the knees to prevent hyperextension, which may be modified to take care of any part of the body, in any degree of muscle spasm, and is for the purpose of relaxation. To give the patient greater relaxation, he should be turned face down two or three times a day unless this position causes respiratory embarrassment. In the acute stage the patient is urged to lie flat, but one no longer fears that the patient will do himself harm through voluntary movement. If the abdominal muscles are in spasm, the patient lies on his back with the hips and knees flexed, the lower legs resting horizontally on a pile of five or six pillows. The pillows are gradually removed as the spasm decreases. No restriction is placed on the position in which a patient chooses to sleep. If there is active spasm in the calf muscles the foot is not put in contact with the foot board until the spasm has been released.

### The Equipment Used in Preparing The Fomentations

1. An ordinary clothes boiler.
2. An ordinary clothes wringer attached to the center of a home-made table frame.
3. Squares of rubber sheeting 20" x 20".
4. Woolen fomentation material. The size and shape of the foment varies with the pa-

tient to be treated. For the back, abdomen, and neck, rectangular fomentations are used. For the arms, shoulders, legs, and buttocks, triangular ones are used because there is more give to material cut diagonally, they fit better and allow for free movement of the part while the fomentation is in place. The triangular shape also allows the fomentation to carry from the thigh to the buttock, shoulder to chest, so that the whole muscle spasm may be covered.

5. Dry flannel and venetian cloth, cut 2 inches larger than the fomentation material and used to cover the hot fomentations.
6. Cotton binders to keep fomentations in place.
7. Safety pins, spring clothes pins, and lifting forceps.

### Treatment of the "Spasm"

As soon as spasm is diagnosed, treatment should be started by the use of hot fomentations which are prepared in a manner somewhat different from the usual procedure. Woolen cloths such as old blankets are cut to fit the parts accurately so that there will not be too much bulk by folding, but so that there are two thicknesses over each area to be treated. A light waterproof covering is used and around this a piece of dry woolen material of appropriate size and shape is wrapped and pinned in position. These outer coverings are spread out and placed accurately in position under the area to be treated before the hot flannel is removed from the container.

The fomentations are boiled and wrung from the boiling water twice through a very tight wringer at the bedside so that as much water as possible is removed. They are then applied directly and as quickly as possible on the part so as to minimize any chance for cooling. It is well to use old wool for the wet packs because new wool seems to be more irritating to some patients. It is unnecessary to protect the skin with ointments although some patients show sensitivity to the application of wet heat by a skin rash but burns should not occur. The packs are placed accurately over the entire muscle and care should be taken to make them of adequate size since the wool tends to shrink from the boiling.

Joints should not be covered by the packs because of the resultant limitation of motion and increased difficulty of treatment unless the involved muscle itself covers a joint, as for example, the deltoid covering the shoulder joint. In the hand and foot, of course, joints are necessarily covered because of the small area involved. The packs do not in any way constitute splints and they must not give the patient any sense of fixation. They are renewed usually every two hours, but may be applied as often as every fifteen minutes when the spasm is unusually acute or threatens the life of the patient,

(Continued on Page 3)

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

Editor.....Lester Raub, B. S.

Advisor.....J. P. Schwartz

Osteopathy Without Limitation

## Kenny Method

(Continued from Page 2)

as in involvement of the muscles of respiration. In such a case the wet packs may be used without covering. The packs are continued uninterruptedly being changed as indicated throughout twelve hours of each day. The alternate heating and cooling of the parts as accomplished by these packs seem to be the factor which tends to overcome spasm.

Passive motion through the range that can be obtained without pain is carried out at least once a day but care should be taken not to aggravate spasm by too frequent examination.

The Kenny technique does not permit muscle testing or the use of respirators. Muscle testing, which incidentally has never been accurate in the acute stage of infantile paralysis, is definitely dangerous because of the likelihood of exaggerating spasm, or of producing incoordination and "alienation." The respirator is not used because its mechanical action in pulling on the ribs tends to aggravate the spasm in the intercostal muscles and because the treatment in these cases, in which spasm is the cause of respiratory difficulty, should be by hot fomentations. The cases in which the higher centers are involved are not benefited by either treatment, and may be damaged by the use of the respirator.

—Lonnie L. Facto.  
(To Be Continued)

## War Gas Poisoning

(Continued from Page 1)

### Persistent Gases

Persistent gases are most dangerous. Their rates of evaporation are slow, and they tend to remain in the area for many hours contaminating the air, and often the shrubbery, walls, and ground. These gases are: **mustard**, **Lewisite**, **chloropicrin**, and **brombenzylcyanide**.

### Classification

The substances used in gas warfare may be grouped under several headings in descending order of toxicity.

I. Vesicants—including mustard, Lewisite, ethyldichlorarsine.

II. Asphyxiants (lung irritants)—chlorine, phosgene, chloropicrin, diphosgene.

III. Lacrimators — chloracetophenone, brombenzylcyanide, ethyliodoacetate.

IV. Nasal irritants (sternutators)—Adamsite, diphenylchlorarsine, diphenylcyanoarsine.

V. Smokes—sulphur trioxide in chlorosulfonic acid, titanium tetrachloride.

## Strictly Plutonic

Trihydrol and dihydrol, oxonium alcohol, Aqua pura, distillata (water, one and all): Solid, gas and liquid states conform to common rule, But challenge scientific men with varied molecule: They're alcohol and aldehyde, straight-chained and cyclic, too; They come in 4's, in 3's and 2's—this chemist's Waterloo.

Opinions on such aggregates arise from deep research On water's critical temperature, below which units merge. Its boiling point is much too high for simple H<sub>2</sub>O. Its freezing point, when it's dissolved, alas, is far too low! The reason for the polymers, our chemist friends decides, Is quadrivalent oxygen, which must be satisfied.

Its odd specific gravity, inordinate latent heat, Great interfacial energy, make water hard to beat. Electrolyte and catalyst and solvent, all in one, And dielectric constant high make most reactions run. Its thermal conductivity and low internal friction Leave water standing sans pareil, to use poetic diction.

It keeps terrestrial temperatures within a vital range, Prevents our protoplasmic stuff from making lethal change. Essential for the bugs and worms and fish and human kind, But whose peculiar molecule perplexes human mind, Yes, "Water, water, everywhere, nor any drop to drink," But water, water anywhere, should surely make us think.

—Hugh Clark.

VI. Incendiaries — white phosphorus, thermite.

### Symptoms and Treatment

In every case of gas poisoning, the victim must be protected by a gas mask properly adjusted to prevent further inhalation of the vapors. He must be removed from the area of contamination to pure air as soon as possible. If poisoned by a persistent gas such as mustard, his clothing must be removed as promptly as possible to prevent further plistering of the skin. Transfer to a hospital must be made as soon as it is feasible.

### I. Vesicants

These are exemplified in mustard gas and Lewisite. Mustard has the odor of garlic, onion, or horseradish but faint. Lewisite is reminiscent of geraniums. Both are heavy oils with low volatility and penetrate leather, and all substance except glass, porcelain, etc.

**Mustard** has a delayed action of two hours or more. It irritates the eyes and nasal passages, and when on the skin, causes after a few hours, severe burns which usually become infected and leave scars after healing. The gas is oil-soluble and enters the lipid tissue. The points of attack on the body surface are usually the moist areas such as the axillae, genitals, and groins. Clothing should be removed and the affected areas washed with oil, kerosene, or an ointment to remove liquid mustard. Soap and water, or sodium bicarb. solution should be applied. Blisters should be opened with a syringe. Tannic acid preparations are recommended for later application. Codliver oil dressings are also good.

When the eyes are affected, there is noted intense smarting, photophobia, lacrimation, pain and headache. The eyes swell and often close. Conjunctivitis may follow. Palliative treatment is recommended. Sterilized liquid petrolatum between the eyelids

will prevent their closure. 2% argyrol and 1% atropine are useful. The eyes should be shaded but not bandaged. The patient should be encouraged to use the eyes as much as may be convenient.

The respiratory tract, excluding the small bronchi, may be affected. Early symptoms are similar to a severe cold, including sneezing and extensive watery discharges. The nares become sore and sometimes ulceration and hemorrhage occur. A nasal douche with 5% sodium bicarb. and tincture benzoin inhalation are recommended. Pneumonia may follow, and this condition is to be treated as usual.

The stomach may be disturbed if any of the gas has been swallowed in saliva, etc. Epigastric pain and vomiting may occur within 8 hours. In severe cases diarrhea may follow. Stomach disturbance is usually over in 48 hours.

**Lewisite** exhibits its symptoms more quickly than mustard, these beginning to appear within 20 minutes. They are similar to those of mustard, and are treated accordingly. Treatments must be made promptly to avoid danger of arsenic absorption and subsequent poisoning.

### II. Asphyxiants

These are primarily chlorine, phosgene, and chloropicrin. Treatments are the same for each gas. **Chlorine** is a visible yellowish-green heavy gas and has the odor of bleaching powder, and Hilex, pungent and irritating. **Phosgene** is almost colorless, with the odor of new mown hay, or silage, is pungent and disagreeable. **Chloropicrin** has a licorice-like odor.

These gases cause pulmonary edema which retards the process of respiration. In severe cases asphyxia may occur, resulting in death. Vomiting and retching accompanied by headache and weakness in legs may be noted. Bronchitis or bronchial pneu-

monia usually follows gas inhalation.

In the treatment, absolute rest is essential. The patient must be transported on a stretcher. He may be given hot drinks particularly coffee as a stimulant. Sometimes artificial stimulation is necessary to empty lungs of fluid. Oxygen inhalation relieves asphyxia, but patient may object to the oppression of a mask on the face. In mild cases 5 grains amonium carbonate every 3 hours is recommended. Morphine, 1/6 grain for mental distress is suggested, but not atropine. Recovery is aided by activity and exercise. The symptoms of **phosgene** poisoning may be delayed for 12 hours and patient may not be aware of being poisoned before he collapses. Generally speaking the use of alcohol and smoking are not recommended.

### III. Lacrimators

These gases (chloracetophenone, brombenzylcyanide, etc.) exhibit more or less transient symptoms and are not to be regarded as dangerous. They attack the eyes and cause temporary discomfort to the eyes and nasal passages. Apply boric acid or weak sodium bicarb. and avoid temptation to rub the eyes. The lacrimators have long been used by police to dispell mobs.

### IV. Sternutators

Adamsite smells like coal smoke, causes sneezing, headache. Keep patient quiet, warm, let him sniff bleaching powder, and give aspirin for headache. Other sneeze gases behave similarly and are treated similarly.

### V. and VI. Smokes and Incendiaries

Aside from temporary flow of tears the smokes do little or no harm. Phosphorus burns are treated with copper sulfate packs, imbedded particles are removed, and treatment for burns is followed. Gas masks afford adequate protection against all gases. Recognition of a gas determines the treatment and saves a life.

Note—This paper is a resume of a lecture presented by Dr. Shumaker, Oct. 2, at the Technical Program of the Fiftieth Anniversary Celebration of Osteopathy.

## West Virginia

The next meeting of the West Virginia Board of Osteopathy will be held at the Daniel Boone Hotel, Charleston, West Virginia, April 26 and 27, 1943. The time of meeting has been changed from February due to the change in dates of graduation at our schools owing to the war effort.

Applications for either examination or reciprocity to be considered at this meeting must be filed with the secretary not later than April 1, 1943.

Application blanks may be secured by writing the Secretary, Guy E. Morris, D.O., 542 Empire Bank Building, Clarksburg, West Virginia.

## Trip to Macon

On October 24th in the wee small hours of the morning several cars left Des Moines filled with students of the Senior classes and wound their leisurely way to Macon, Missouri, for the annual visit to the Still-Hildreth Sanatorium.

A short visit was made at Kirksville on the way including a rapid tour through the Kirksville Osteopathic College.

We continued the short drive to Macon and met at the Sanatorium according to schedule. Dr. Fred Still met the group and showed us to the ballroom where we gratefully sank into comfortable chairs while listening to the lectures.

Dr. Fred Still began the lectures by a short resume of the founding of the institution, the history of the buildings themselves and a brief sketch of the care of patients. (Believe it or not, we were all there listening to the lectures when Dr. Facto arrived—imagine his surprise!) Particular mention was made of "Woody" (Chief Wahoo) Hockaday, telling about his condition and many of his exploits. "Woody" then came in to lecture to the group. As usual, his topic was world peace and he recounted to us his ideas for securing peace and recognition. He told us about several of his visits about the country on his peace campaigns and requested an audience with one of the group to make further plans. Clyde Johnson was selected to act in this capacity and can, no doubt, give you quite a bit of information about ridding the world of war.

Dr. Fred then introduced the staff of the institution and announced the adjournment for dinner. We were served a most delicious chicken dinner following which Dr. Fred extended the welcome from Still-Hildreth. Dr. Facto responded with our appreciation and called upon Ed Mossman (senior A vice-pres.) and Jim Bone (student council pres.) to give a word.

Dinner was followed by a tour through the main building and annex, visiting with some of the patients and hearing about the individuals and the care and treatment given.

After the tour, again we met in the ballroom and heard a lecture by Dr. Hoyle about Schizophrenia.

We all gathered on the steps for some pictures then wearily climbed into the cars and started homeward.

Our thanks to Dr. Facto for arranging this trip for the Seniors. Perhaps we should thank both Dr. Facto and Dr. Fred Still for making sure we all got out of the Sanatorium, although we worried a few minutes about the absence of little Sue (ask her what happened).

—Mary Williams.

## Pursuit for a Reason

(Continued from Page 1)

even ending in complete degeneration of the nerve itself and consequent changes in the tissue innervated. In other words the nerve disease begins with an intoxication; trophic change, disturbance of the gradation of synaptic resistance with the expression of the condition in the area innervated being any dysfunction, perversion of function or acquisition of abnormal characteristics. This extent of involvement constitutes a neurosis.

The etiology of the changes that constitute a neurosis is as varied as the symptomatology. "Every ordinary or exceptional experience of human life" is the ubiquitous etiology. Toxemia, due to drugs, ingested and absorbed substances, metabolic disease, acute or chronic infectious diseases and even toxicity of our own accumulated metabolic products, is adequate to initiate the involvement. Inherited instability of nerve function (abnormal gradation of synapses), trauma, emotional disturbances, perverted diet, and avitaminosis are all doubtlessly etiological factors. Thus neurosis is a nutritional or toxic disturbance to a nerve cell with resultant dysfunction of the nerve itself and of the tissue innervated.

### Pathology

Pathology of nerve cells involved in neurosis consists only of: a diminution in the number of Nissels granules slight abnormality in staining reactions; barely detectable irregularity and swelling of the cell. Even though these changes are by some considered a non-pathological evidence they are with increasing frequency being appreciated to be more than functional disturbances because of their constancy. Evidence is established that there is persistent metabolic disturbance, nutritional defection, vaso-motor abnormality and the absorption by the nerve cells of toxic substances mentioned above in discussion of etiology. Therefore, neurosis represents the condition of the beginning of true pathology.

### Classification

The common classification of neuroses, along with an example of each type, follows:

Glandular neurosis — Froelich's Syndrome  
Fatigue neurosis — Neurasthenia  
Motor neurosis — Parkinsonianism  
Secretory neurosis — Hyperchlorhydria  
Infectious neurosis — Chorea  
Sensory neurosis — Pain and paresthesia  
Syncho-neurosis — Hysteria  
Organ neurosis — Gastric  
Vascular neurosis — Raynaud's

### Symptomatology

As has been mentioned any symptom, since all are the result of toxemia, reflex arc or vaso-motor disturbance, may be caused by this beginning phase, of neurosis of the nerve cells. The effect on the structure in-

nervated may be: hyperfunction; hypofunction; or the effect of these altered functions on other tissues.

### Treatment

Treatment by ordinary allopathic physicians includes among other things equally inexplicable, iron, quinine chloral hydrate, triple bromides, strychnine; belladonna, arsenic, all the vitamins, salicylates, lead water, potash nuxvomica, morphine, T.N.T., HCl, mercury, chloroform, ephedrine, adrenaline, iodides, cocaine, acetanilide, antipyrin, phenacetin, fish oils, valerian, ergot, castor oil, mustard, cannabis indica. Also the following treatments are used for apparently no more plausible reason than the ineffectiveness of the above "standard prescriptions": long wave diathermy, short wave, infra-red, ultra-violet, ichthyol, magnesia, vibrations, glandular and supposedly glandular products, x-rays, ozone, to which the Chinese add shark-fin soup. Upon retrospection the last might be the best—if it tastes good.

Rational treatment includes: The eradication of etiological factors responsible for toxicity and nutritional disturbance; normalization of synaptic resistances by the correction of spinal and visceral lesions, and by the facilitation of drainage from the nerve tissue by manipulation; and the establishment of proper routine and application in the patient's life. This is usually all the treatment necessary for this low grade involvement of nerve tissue.

The next degree of nerve tissue involvement, that classed as neuralgia, will be considered in a subsequent paper.

—Byron E. Laycock.

## Births

Doctor and Mrs. Neal Johnson of Scottville, Michigan, announce the birth of a baby boy, Allen Neal, on October 19 in the Detroit Osteopathic Hospital.

Also in Michigan Doctor and Mrs. R. P. Perdue of Flint send news of a 7½ pound son, Arnold Lee, born October 16.

## STILL COLLEGE CLUB

### HAVE YOU JOINED YET????

This club is something new and something hot. . . . It's less than six weeks old and has 135 members with new ones coming every day. . . .

The purpose???? To put the Teaching Clinical Hospital on a functional basis by providing funds to the Public Relations Committee of the National Alumni Association.

Dues???? One (\$1) dollar per month. Anyone with a buck may belong. We even pay the postage.

Details available upon request . . .

Send dues to D. M. S. C. ALUMNI ASSOCIATION

710 Clinton, Des Moines, Iowa

P. E. K., D. O.

## Kenneth Schwab

### Receives Commission

Kenneth Schwab of the Freshman A class has been called to active Naval service. He has been granted a commission as Ensign and will leave Des Moines Saturday, November 14, to join his wife in Washington, D. C., before proceeding to the post where he will receive his preparatory training. We wish Ensign Schwab the best of luck and are expecting to have him back at Still, after the duration.

### Freshman Election

The Freshmen A's held a meeting Wednesday, November 4, for the purpose of class election and the choosing of a class advisor. This class of 14 with Mr. H. Waldo Merrill, student council representative, as chairman, elected Mr. James W. Allender as president, Mr. Gordon Sherwood as vice president, and Miss Sarah-Jean Gibson as secretary-treasurer. For their advisor they chose Dr. B. E. Laycock. This was the first organized meeting of the Freshman A class, but far from the last. This class, I'm sure, is going to be one of the most lively in school.

## Military News

Recently acquired addresses:  
Private David Friedman  
Infirmary  
New Cumberland, Penna.

R. L. Nicholas  
30 M.T.B., Co. A, 3rd Plt.  
Camp Grand, Illinois

### ACTIVITIES:

Lieutenant Joe Gurka has recently been visiting in Glasgow, Scotland, while on a furlough from England where he is stationed.

### Junior A Class Meeting

The Junior A class recently elected their officers for the current semester. The results were: President, Dave Heflin; vice-president, Carl Waterbury; secretary-treasurer, George Shimoda. Dr. Clark of the faculty has consented to be the class sponsor.

—George Shimoda.



Entered as second class matter, February 3rd, 1923, at the post office at Des Moines, Iowa, under the act of August 24th, 1912.

# THE LOG BOOK

Accepted for mailing at special rates of postage provided for in Section 1103, Act of Oct. 3rd, 1917, authorized Feb. 3rd, 1923.

PUBLISHED MONTHLY BY THE DES MOINES STILL COLLEGE OF OSTEOPATHY

Volume 20

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NUMBER 12

## OSTEOPATHY . . . A Progressive Science

"A stream rises no higher than its source." As a corollary to the above quotation, we may say that the Osteopathic profession can rise no higher than its educational standards and its educational policies and facilities. On October 3, 1942, we celebrated the 50th anniversary of the beginning of Osteopathic education and the establishment of the first institution for the teaching of the science of Osteopathy. This date is indeed an important mile-stone, and is worthy of the attention and thoughtful consideration of scholars and philosophers, as well as of those who are primarily interested in the growth and development of Osteopathy as a modern science of healing. Beginning in a very humble way, in a small cottage in Kirksville, Mo., on October 3, 1892, with a class of seventeen, Dr. Andrew Taylor Still, laid the foundation stone of the Osteopathic educational program. The faculty was limited, but had the priceless advantage of the inspiration and the vision of the founder.

The course of study consisted of two full years of ten months each, which was the requirement for the following fourteen years. In 1906 the requirements were extended to three years of nine months each with high school graduation as an entrance prerequisite. Ten years later, in 1916, the course of study was again extended to four full years of nine months each, high school graduation remaining as the necessary entrance requirement. In the meantime other Osteopathic colleges were established in various parts of the United States, a number of which had adequate financial background and professional leadership, and which have survived and constitute today an important part of the Osteopathic system of education. Other Osteopathic colleges not so strongly endowed, played their part in the early development of Osteopathic education and were either discontinued or absorbed by the better established Osteopathic institutions.

With the extension of the Osteopathic curricular programs  
(Continued on Page 3)

## Dr. Bachman III

To Dr. Bachman, who has been laid up in bed the last few days, the school and the **Log Book** send their best Christmas and get-well wishes.

## GREETINGS . . .



*As we once again approach the Christmas Season it is not with the customary joviality and merriment as in years past. Once we took it all for granted . . . Merry Christmas and a Happy New Year! This year the same old greeting pulls at our heart-strings as we realize that almost every family-circle in the Nation is broken by the absence of one or more members away in the service of our Country.*

*Des Moines Still College of Osteopathy . . . the Board of Trustees, the Faculty, the Students . . . are all on the job to do their part in filling the urgent demand for well-trained physicians at this time of crisis.*

*To our many friends everywhere . . . wherever you may be . . . we send a hearty greeting . . . MERRY MERRY CHRISTMAS and a HAPPY EVENTFUL NEW YEAR!*

## The Kenny Method of Treatment for Infantile Paralysis

(Continued)

**Muscle Re-Education.** — The Kenny method of muscle re-education is based on the symptoms and concept of the disease previously described.

First, it assumed that nerve cells are not permanently or completely destroyed until failure of the muscles supplied by those cells, to respond to treatment, indicates that destruction has occurred.

Second, in addition to anterior horn cell destruction the lack of function is considered to be also the result of loss of connection with the central nervous system either through "mental alienation" by which the impulse is suppressed, or through incoordination by which the impulse is diverted to other channels, or both.

The purpose of re-education is to restore connection of the part with the central nervous system (to restore "mental awareness"). Muscle strength is not a primary

(Continued on Page 2)

## Pursuit for a Reason

### Neuralgia

Neuralgia is one of the most common of diagnoses. It satisfies the patient even though it does not satisfy the physician who makes it. Neuralgia, or pain in the nerve, is a symptom, with some definite soft tissue changes both in the cell body of the nerve cell and the tissue innervated. All neuralgias are due to something, and a diagnosis of neuralgia without the etiological factor determined is no diagnosis.

The existence of pain naturally concentrates our attention on the sensory aspect of nerve tissue and almost entirely upon cerebrospinal and certain cranial nerves. The fibers associated with the vegetative nervous system are usually forgotten since they contain no pain fibers, however capable they may be of partaking of the same soft tissue changes, the same functional perversion, the same reflex arc disturbances that are present in the nerve itself when it is in the state called "neuralgia."

Etiologically neuralgia is more  
(Continued on Page 4)

## Every Friday

Sometimes it seems that we Still College students do not properly appreciate (or often attend) the assembly programs which are an every Friday feature for our entertainment and information as well as an opportunity to get together for announcements and for just plain friendship. Because so many of us have outside jobs and the rest of our spare time is occupied in study (or so we like to say) there isn't a whole lot of intrascholastic social life. So hoping to whip up your interest and appreciation of these meetings, students, and for your information, alumni and friends, the **Log Book** will give a short report each month on the assembly programs. We hope also to influence the boys (and certain professors even) who gather in the corner drugstore each Friday at 10:20 a. m. to come along to the fifth floor with the rest of the school.

### Friday, November 20

Dr. Bachman was responsible for a very fine program, he had as the guest speaker the Rev. L. K. Bishop, of the Central Church of Christ. In an inspiring address Rev. Bishop dealt with the things we had to be thankful for this Thanksgiving and he pointed out to us that despite the war these things are many. Preceding his talk Dr. Bachman's charming and talented daughter, Miss Enid Bachman, played two harp solos so well that several encores failed to satisfy her enthusiastic audience. We don't know if the harp and the Reverend were an intentional  
(Continued on Page 4)

## Singleton Essay Prize Contest

As in past years the Undergraduate Essay Contest, sponsored by Dr. R. H. Singleton of Cleveland, will be held in the Osteopathic Colleges. This year a prize of \$25.00 is offered for the best essay submitted by a student from this college on the subject, "APPLICATION OF OSTEOPATHIC PRINCIPLES IN THE TREATMENT OF INFANTILE PARALYSIS." The winner of the contest from Des Moines Still College enters competition with the best from the other colleges, and the best of these six essays wins an additional \$25.00, to be presented at the 1943 National Convention. The contest is open to students in the upper half of their sophomore year, juniors and seniors.

# FRAT NOTES



On Sunday, November 22, Delta Chapter of Phi Sigma Gamma welcomed into its membership Brothers Allhouse, Clausen, Mucci, and Sherwood. Following the initiation the members had a luncheon at the Silhouette.

At the last regular meeting the chapter pledged Bob Allen, Hoy Eakle, and Eugene Stano. We welcome them into the pledgeship of our fraternity and hope that we will be able to help them on their road to osteopathic success.

Along with the Christmas season comes memories of the annual Phi Sig "Tom and Jerry Christmas Party". We have decided to combine this with a record party, so it should prove to be a gala affair to end the school year before leaving for our respective homes for the Christmas vacation.

The old chapter house has taken on a new aspect since our new house-mother has taken on the upkeep of the house. Her fine cooperation in keeping the house cleaned and making a more home-like atmosphere in the chapter house is truly appreciated by all the members.

—H. E. H.



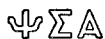
Lambda Omicron Gamma takes this opportunity to wish all our friends a very Merry Christmas and a Happy New Year.

Our first social event of this semester will be a dinner Sunday night, December 13th in honor of our new pledge, Tobias Shield. With the pledging of Toby, our pledge group now numbers four members. We are happy to have Robert Tonkins back with us again and glad to see him have the chance to finish his professional training.

Alumnus Dr. Paul Green was in town for a few days and from that healthy look internship and marriage are definitely agreeing with him.

Plans are being made for future business and social meetings of our chapter.

—A. A.



At the regular meeting of Psi Sigma Alpha held at the Phi Sigma Gamma fraternity house, November 10, business was the theme. Following this, we had a very interesting discussion on the internship at the Des Moines General Hospital and internship in general.

A dinner, in honor of the men receiving highest marks during their sophomore and freshman years, was held in the Cremona room at Younkers on November 24th. Those honored for sophomore high grades were: Jim Booth, Robert Patton, and Gerald Dierdorff. Those receiving high freshman marks were: Herb Harris, Don Young, and Lester Raub.

Following the delicious turkey

dinner, we were honored by an interesting talk and practical technique demonstrated by Dr. Roberts. Dr. Roberts was affiliated with the college during its early years and taught technique at that time. —C. D. S.



The final initiatory degrees bestowed upon our new brothers: L. L. Gaudet, Dr. M. B. Landis, and W. T. More climaxed the social events of the past month.

Dr. and Mrs. Cash, our hosts at their home, brought to an end the evening's activities with a fine "after-initiation" dinner which each of us enjoyed to the utmost. We wish to extend thanks and appreciation to them both for the fine spirit and good-will shown.

Congratulations have been given to our newest pledge Mr. E. Small, which adds another man to our list of pledges. The others being: M. Anderson, H. Beals, "Christy" Christianson, R. Gustafson, R. McCracken, W. Merrill, R. Rasmusson, and J. Woodmansee.

On the evening of November 11, the Iota Tau Sigma held their semi-annual smoker at Walnut Woods. This party was the first one of this kind held by the men, in the form of a B.B.Q. it was something novel and different to them as well as the guests. Over the metal grates of an open fireplace, outdoors, the tasty hue and odor of 30 lbs. of B.B.Q.'ed meat could wonderfully be detected. Under the personal guidance of Brother More, chief cook of the occasion, the rolled meat was further enhanced by the addition of a tangy sauce of his own invention, amid the sighs and exclamations of the guests.

The freshmen with the exception of one, were present as well as guests of the brothers and the alumni. The dinner ended with short talks and greetings to the new men by the practicing brothers.

Further social activities will include surgical and non-surgical technic demonstrations and entertainment of an educational nature to be presented soon.

By special permission, election of officers shall be held in the latter part of February, instead of the usual time.

Keep 'em Flying!!

—F. J. N.

## ATLAS CLUB

The Atlas Club continues to meet at the YMCA and is well started on a new phase of activity both social and educational. We are having our regular Practical Work lectures by prominent physicians as usual and right now a dinner Sunday, Dec. 13, for actives, pledges and guests is planned. Wednesday, Dec. 16, is set as the date for initiation of last semester pledges. Our most recently acquired pledges are Fred Lowrie and Francis Ayres. The Atlas Club sends its best Christmas and New Year's wishes to all of its alumni and friends.

—L. R.



Our Sorority is now proud to present a new member, Miss Sarah Jean Gibson, whose initiation took place this last month, at the apartment of our president, after a lovely "Grace Ransom" dinner. Following the initiation a business meeting was held, and now we are planning for a Christmas party to keep the spirit of the season and of Delta Omega alive and warm.

M. K., Corr. Sec.

## Kenny Method

(Continued from Page 1)

consideration but the re-establishment of "Awareness" and the production of a normal rhythmic motion, no matter how weak, is the aim of the treatment. Increase in muscle strength will follow. Muscle testing in the form of attempt to determine muscle strength by isolated action of individual muscles is avoided because of the danger of producing or increasing incoordination and "alienation" as well as spasm.

The neuromuscular system is highly specialized. Although each muscle has a definite primary action, which is a direct pull upon its insertion, it rarely acts alone because of the integration and cooperation of the adjacent muscles. When a joint is moved in any specific direction a number of related muscles come into play. However, there is usually one muscle which is primarily responsible for any given motion and this muscle can be known as the primemover of the joint in that particular direction. One must also remember that for each motion performed by a muscle there is an opposite motion performed by an opposing muscle and that the effective function of a joint depends upon the orderly regulation of these opposing units by the controlling nervous system. When a flexor begins to contract the extensor must simultaneously elongate in a graduated manner so that smooth action of the joint results. The elongating muscle must retain at all times a certain amount of tonus so as to be able to contract immediately and reverse the joint motion. This harmonious action which allows a smooth, orderly and effective functioning of muscles is well referred to as coordination. The disappearance of a particular muscle action from the motor scheme, whether due to direct involvement of the innervation of that muscle by the disease, to indirect involvement by "alienation," or some other cause, will result in attempts by the adjacent muscles to substitute for the lost motion with the development of incoordination.

In starting muscle training this substitution of muscle action must be completely removed and prevented. Every mental and physical effort of the patient must be guided to the muscle which is being trained and to that alone. Allowing and even encouraging a patient in the free choice and substitution of muscles

for the mere satisfaction of hazardous motion of the joint invites disaster.

**Technique of Muscle Re-Education.**—As soon as joints can be moved passively through a small range without pain or incoordination, indication that spasm is lessening, muscle re-education within that range is started with the patient still in bed. At first this consists largely of maintaining or developing a "mental awareness" of the muscles and their insertions. Later, as spasm decreases, the more active re-education can be added. In the presence of incorrect muscle action such as substitution or incoordination, active motions on the part of the patient are prohibited until passive motions can be carried out by the technician with complete relaxation of the patient. Having achieved this state, voluntary motions on the part of the patient may be instituted but such action is always under the control and guidance of the technician. For this later muscle re-education the patient is placed on the treatment table in as normal a position as possible. This is considered to be the usual standing position with the arms at the side, the legs in a straight line with the body, the feet at right angles and the knees straight. The patient must be relaxed and cooperative. Re-education cannot be carried out in babies who are crying, or in children or adults who are fearful of pain or other harm. Therefore, re-education cannot be attempted before painful spasm is eliminated.

Before treatment is started the patient is instructed to lie quiet without using any muscles other than the ones to be treated. His attention must be concentrated solely on the motion to be performed. The technician then firmly grasps the part to be treated and without causing pain carries out the intended motion passively through whatever range is possible without pain. The technician instructs the patient concerning the part to be moved by stroking the exact insertion of the muscle group to be trained. With the patient concentrating on this point of insertion the motion is carried out twice passively and then the patient is instructed to attempt to carry out that motion actively. A muscle, whether paralyzed or "alienated," which is being trained, must be made to contract at least in a mental sense if in no other way; the conscious mind must accept this "awareness" of the muscle if orderly and coordinated action is to be obtained. If any visible or palpable motion is accomplished, the treatment is stopped immediately in order to leave with the patient the memory of the accomplishment. If any muscles other than the one to be trained come into play, the attempted motion is stopped immediately and the unwanted muscles put out of action by instructing the

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**Buy  
War Savings Bonds**

# The Log Book

The Official Publication of  
DES MOINES STILL COLLEGE  
OF OSTEOPATHY

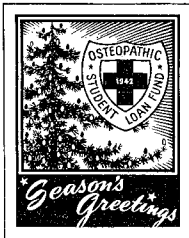
Editor.....Lester Raub, B. S.

Advisor.....Dr. J. P. Schwartz

Osteopathy Without Limitation

## Many Students Need Help!

The Student Loan Fund of the American Osteopathic Association was set up eleven years ago to help worthy students in osteo-



pathic colleges who have exhausted other sources of financial assistance.

The annual sale of Christmas Seals to osteopathic physicians, their patients and friends, which is now in progress has been the principal source of income, although there have been other gifts and bequests.

The total receipts to date are now \$37,565.62.

Loans have been made to 140 deserving students, both men and women.

All available cash is constantly on loan and applicants for loans are on file awaiting action. Contributions are needed to meet the increasing number of requests for loans.

The Committee requests \$1.00 for each sheet of 100 seals, but hopes that the average contribution will exceed that amount.

The Student Loan Fund Committee deeply appreciates your previous contributions and is again anticipating your generous support this season.

## Military Address

Corporal C. B. Bolton (May, 1941)  
Co. "E", 2nd Platoon,  
Billings General Hospital,  
Fort Benjamin Harrison,  
Indiana M. D. T. S.

## Births

On Monday, November 30th, the family of Dr. and Mrs. Neil R. Kitchen was increased by the birth of David Wayne Kitchen. Best wishes David.

A daughter, Marjorie Anne, was born to Dr. and Mrs. Alan R. Becker, Nov. 16. Dr. Arthur Becker of Lake Orion, Mich., is the proud grandfather.

## OSTEOPATHY . . . A Progressive Science

(Continued From Page 1)

and the inclusion of the teaching of associated surgical specialties in 1906, the Osteopathic clinics which had been adequate for the practical teaching of Osteopathic Therapeutics were found to be insufficient for all needs and Osteopathic hospitals were built in association with Osteopathic teaching institutions. Later Osteopathic Hospitals, Sanatoria and Clinics were established in various parts of the country not directly associated with any Osteopathic teaching institutions.

An organization known as the Associated Colleges of Osteopathy was developed and, fostered by the American Osteopathic Association, through the years has been of increasing importance in the development and co-relation of the Osteopathic curriculum. The Bureau of Professional Education and Colleges was evolved in the machinery of the American Osteopathic Association and a plan for an annual inspection of Osteopathic colleges materialized. These two organizations, The Associated Colleges of Osteopathy (now the American Association of Osteopathic Colleges) and the bureau of Profession Education and Colleges of the American Osteopathic Association have had much weight and influence and directive force in the progress of Osteopathic education and Osteopathic Educational Standards.

In 1938 the entrance prerequisite for all accredited Osteopathic colleges was increased to one full year of college work and in 1940 it was further increased to two full years of college work. A number of our Osteopathic colleges had anticipated these increased entrance requirements by several years.

There are now six accredited Osteopathic colleges with associated hospitals and clinics maintaining the high standards determined by the Bureau of Professional Education and Colleges of the American Osteopathic Association.

Legislative recognition of the worth and integrity of Osteopathic educational programs in the various states has kept pace with the development and progress of Osteopathic educational standards, so that today Osteopathy, as a system of practice, is legalized in every state and in the District of Columbia. National legislative enactments have also recognized the value of Osteopathy as a system of practice by including Osteopathy as a recognized system of practice in various bills and privileges.

This very brief survey of the rise of Osteopathic education cannot be otherwise than impressive when one considers the small beginning and the progress made in the relatively short period of fifty years. Osteopathic education has made as much progress in these first fifty years as has been made by contemporary professional systems in the past 150

years. Much honor and respect is due to those leaders in Osteopathic education groups who outlined the policies and directed the growth of our Osteopathic educational institutions. The educational policy has been developed upon a broad plan and has been inclusive rather than exclusive. It has been a liberal policy rather than a restrictive one.

Today, after fifty years, Osteopathic educational institutions stand shoulder to shoulder with modern contemporary institutions. The colleges are modern, well-equipped and have strong faculties, composed of individual teachers with high scientific training and extended clinical experience. Our Osteopathic hospital will compare favorably with the best in the United States. This broad, inclusive and forward looking policy in Osteopathic education augurs well for the continued growth and development of the great Osteopathic profession.

The science of Osteopathy has proved to be, as the result of fifty years trial in the bright light of experience, a contribution to the well-being of humanity of great value. Resting not upon our laurels, but rather encouraged and sustained by the progress of the past fifty years, the Osteopathic profession with renewed courage girds itself for even greater progress in the coming fifty years. If we keep the lamp of scientific honesty brightly burning and if we keep the spirit of service ever foremost, we should continue to grow and develop as a useful profession, and thus be enabled to make an increasingly valuable contribution to our fellowmen.

Des Moines Still College of Osteopathy takes justifiable pride in its record of forty-four years contribution to this great program of outstanding achievement in scientific education. The continued progress of the college is assured by the fine spirit of loyalty evident in its strong and active alumni organization.

—Arthur D. Becker, D.O.,  
Lake Orion, Mich.

## Kenny Method

(Continued from Page 2)

patient to do so or by finger pressure against the muscle. Much care is observed to prevent incoordination, which is shown by this attempt of the patient to bring other muscles into play. Care is taken also not to tire the patient in any way. Treatment must be discontinued if the patient shows evidence of fatigue or is uncooperative for any reason. As the patient learns how to move the muscles, more movements are given, gradually increasing the range and number of motions, although enough work to tire the muscle is never allowed.

If there is no trace of motion in spite of absence of spasm, the proprioceptive reflexes are stimulated by placing the muscle slightly on the stretch and then stimulating the muscle through

the tendon by moving the joint backward and forward. This procedure is repeated daily or several times daily even while the patient is receiving hot fomentations. Miss Kenny has demonstrated that function of that muscle should eventually return if the muscle can be stimulated by this procedure so that the course of the tendon can be followed from its insertion to the muscle belly. "Loss of tendon" which indicates complete loss of muscle tone is an indication of probable permanent and complete loss of function.

For a proper understanding and execution of muscle re-education by Miss Kenny's technique a knowledge of her classification of muscles is necessary.

Group 1. Muscles that contract within their normal resting length.

Group 2. Muscles that have to be removed from their normal resting length before a suitable contraction can occur to perform their primary action.

Group 3. Muscle groups with separate origin and common insertion and multiple action.

Group 4. Muscle groups with dual origin and dual insertion and multiple action.

Group 5. Muscles that stabilize positions obtained by other muscle groups.

The first two are the most important groups.

The biceps of the arm and the hamstring muscles of the lower extremity belong to the first group and the triceps and the quadriceps to the second, and one example will show the importance of this classification. The quadriceps, to contract so as to perform its normal action, must first be pulled from its normal resting position by flexion of the knee. Only then can the pull be placed at the insertion of the patellar tendon and the knee extended. The performance of this motion is the primary function of the quadriceps muscle. So-called "setting" of the muscle with the knee extended does not have any place in the Kenny method.

Muscle re-education, then, depends upon the relief of spasm, the teaching of muscle awareness, the combatting of incoordination and "alienation," and the retraining of nerve pathways back to the non-functioning muscles.

In the following discussion, a fairly complete description of the re-education of the neck muscles will be given, and then the other areas of the body will be mentioned as to muscle groups, but no specific discussion will be given as it is similar to that for the neck. It is understood that the same general procedures are carried out in each case. ONLY TWO POSITIONS ARE USED, THE SUPINE AND PRONE, AND ALL THE ANTERIOR MUSCLES ARE TREATED BEFORE THE PATIENT IS TURNED OVER TO ALLOW THE POSTERIOR ONES TO BE ATTENDED.

—Lonnie L. Facto, D.O.  
(To Be Continued)

## An Interesting Case History

On August 6, 1942, Mr. W. A. G. came to our clinic for an examination. His age was 36 and his occupation that of a traveling salesman. The patient came in complaining of a frontal headache that was made so intense by any quick motion, such as sneezing, coughing, jerking of the head, or bending over, that he had to use pressure on his temples to relieve the pain. He said that there was some aching in the temple region almost constantly and this pain seemed to radiate up over the frontal region. The patient first noted the pain in May, 1942, and as it continued to increase he went to a physician for a general check up. The report at that time was negative in all instances and the patient was given various sedatives over a period of time.

On the recommendation of this doctor he had his eyes examined and was fitted with a pair of glasses. The patient wore the glasses for one month and noted no relief. He then returned to the medical doctor again, and was informed that there was no apparent reason for the severe aching.

He was advised by a friend to go to some physician using manipulation therapy. After a few treatments from one without any results he went to another but obtained no relief. Through contact with a student of Still College he decided to come to the College to see if he could find out the cause of his headaches.

The physical examination of the eye, ear, nose and throat, pulmonary, cardiovascular, and gastrointestinal systems were negative. The respiratory rate was 24; heart rate 70; and a blood pressure of 122 over 75. All reflexes were negative.

The laboratory examination showed a negative urine with the exception of a trace of albumin. The blood examination showed a hemoglobin of 90%, red cells 4,450,000, white count of 8,000, and a differential count of polys 59%, lymphocytes 30%, large monocytes 11%. The Wasserman test at Iowa City was negative.

The spinal examination showed lesions of the occiput and the first two cervical vertebrae, an upper dorsal flexion group, and some change at the lumbo-sacral articulation.

A tentative diagnosis of lesions of the upper cervical and dorsal regions was made.

Treatment. — The patient was treated in the clinic every other day. After the third treatment relief of the headaches was obtained, and patient was advised to come back to the clinic if the headaches returned. During the following weeks the interval between treatments increased as the patient returned only when there was some pain or discomfort in the head. After nine treatments the patient felt that there was no use to continue treatment as he had no symptoms of headache. However, he was

advised to return in one month for a general checkup. This he did with the report that he had not been bothered with headaches since the last treatment.

—George Lewis, Senior Student.

## Pursuit for a Reason

(Continued from Page 1)  
verbose than neurosis but in general the causative agents are said to be the same.

Neuralgia is classified both as to etiology and to locus, as toxic or traumatic neuralgia, or as brachial or gasserian neuralgia.

### Pathology

The pathology present consists of changes in the cell bodies and in the tissue innervated. There is evidence of toxic or nutritional disturbance, diminution of nissl's granules, eccentricity of the nucleus, chromatolysis, slight edema, and abnormal staining reaction demonstrating an increased H ion concentration (i.e. a decrease in p H). These changes are mostly evidence of intoxication. Occasionally red cells are found in and around nerve tissue in areas of neuralgia. The same degree of trophic disturbance and intoxication is present in the tissue innervated by the involved nerve or nerves.

### Physiologic Perversion

The perversion of the physiology of the nerve tissue and its area of distribution is more marked than the so-called pathology. The nerve tissue is hyperirritable. The sensory terminal is stimulated by lesser irritants than normally it is and consequently an increased number of impulses are constantly flowing centrally. Likewise impulses are transmitted with greater facility. The synapse is impaired in its function and does not offer the normal degree of resistance. Impulses which normally would be screened out at the synapse become adequate and pass to produce reflex response. Thus there is a greater efferent discharge over the trajectory of the nerve and these increased impulses have an at least proportionately increased effect on the motor or glandular tissue with the possibility that their effect is disproportionately exaggerated. This hyperirritability of nerve tissue and the radiation to reflex arc efferent limbs with which the tissue would be normally unassociated accounts for the nutritional, toxic and vasomotor perversions present in neuralgia.

The tissue supplied show evidence of this physiological perversion. Vasomotor crises are precipitated with greater ease. Muscle tissue is maintained in a hyperirritable condition and hypertonicity is present. The muscle tends to undergo contracture with slight irritation, with what would normally be insignificant trauma or with sudden stretching. The skin over such areas shows lowered resistance to infection and consequently pimples, boils and contact dermatitis develop with understandable frequency. The skin may be hyperkeratotic and the hair is usually coarse and dry.

The physiologic perversion is a

natural invitation to pathologic change, a "locus minoris resistentiae." True neuritis is prone to develop.

### Diagnosis

The diagnosis is made upon finding the following mild changes evident. The presence of pain and its recurrence in the same area is seen. The pain is worse at night, when blood pressure is lowered and when joint motion and muscle action are greatly diminished. Weather changes, humidity, etc., constipation and any decrease in the elimination rate by the various excretory avenues intensify the pain. Toxemia due to any cause magnifies the discomfort.

### Treatment

Since all these changes are present in the lesion area neuralgia is amenable to manipulative treatment. The ordinary medical treatment description would mean the reviewing of all those used in neurosis and the addition of a further list of equal length whose combined effectiveness does not merit the space required to list them. One look at the tissue changes suggests the proper and obvious manipulative treatment.

In the next paper we will concern ourselves with the more serious involvement of nerves and their related tissues classified as neuritis.

—Byron E. Laycock.

## Every Friday

(Continued From Page One)

combination but they certainly went well together.

### Friday, November 27, Thanksgiving Vacation

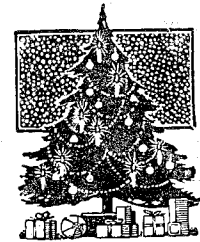
### Friday, December 4

Dr. Schwartz, the Still College prexie, prevailed upon the Navy to show us a couple of motion pictures dealing with the war. Chief Petty Officer Oliver, U.S.N., presented these two pictures which were extremely interesting and instructive. The first film was "Target for Tonight," it depicted the vast amount of planning and information needed to prepare for a successful R.A.F. raid over Germany. Actual scenes from the raid were also included. Then in technicolor we saw the official movies of the grim "Battle of Midway," showing the destruction wrought by the Japs at the island and the high price they paid for what small success they had.

### Friday, December 11

Dr. Landis, in charge of this week's program, secured for us an excellent singer and piano accompanist. Both young ladies were Drake students and their music was greatly appreciated by the students and faculty. The speaker at the assembly was Mr. Carlson from the Iowa State Health Department who informed us of certain state laws governing general practice, procedures in signing death certificates, etc. After his speech he distributed booklets which went into the subject in greater detail.

## Christmas Tree



In the clinic waiting room stands a large and beautifully decorated Christmas tree, furnished by the school. It will remain there to bring Christmas cheer to our patients until Friday, December 18, when it will grace the auditorium at the Christmas assembly.

## Special Academic Features at Still College

### Red Cross First Aid Classes

The Senior A and B classes have just completed the advanced Red Cross First Aid course of ten hours having previously passed the twenty hour Standard course. Their instructor in the training has been Dr. Beryl Freeman, one of the outstanding Red Cross instructors of Des Moines among Osteopathic Physicians. Shortly after New Years an instructor will be sent from the Red Cross office in St. Louis to teach these students the fifteen hour Instructors' Course. Those who qualify in this final phase of first aid training will possess the Standard, Advanced, and Instructor's Red Cross Certificates and will be entitled to teach Junior, Standard and Advanced Courses to laymen. This is another of the many ways in which Still College is contributing to the war effort.

### Program at Polk County Osteopathic Association Meeting

On Friday night, December 11, the College presented a technical program at the Polk County Osteopathic Association meeting held at the Kirkwood Hotel. A dinner and a business meeting were followed by lectures given by faculty members. Dr. Owen's subject was "Tropical Diseases," Dr. Facto talked about the "Pathology of Pneumonia," and Dr. Laycock's address dealt with the "Pathology of Bronchiectasis." All of these lectures were illustrated with kodachrome slides.

### Gynecological Technique

On December 3 the Gynecology Class was shown several reels of motion pictures demonstrating several types of gynecological treatment that can be made a part of office procedure.

## Births

Dr. and Mrs. C. R. Barry announce the arrival of Kay Diane, October 24. Her father writes that they like her so well they have decided to keep her!

We have the pleasure of announcing another baby girl, born November 30, 1942. She is Barbara Dianne, the daughter of Dr. and Mrs. C. W. Ball.



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