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 deferrals. 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 intentions to present for 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 logical treatment in- another thing to evaluate them necessary laboratory tests, and physicians. To further clarify and established and logical treatment in- another thing to evaluate them necessary laboratory tests, and physicians. To further clarify and maintained by the Government. Defense measures instituted and maintain as a defense mechanism for this important change are cations. The details and mechanism for this important change are being worked out by each of the osteopathic colleges, it has been much confusion and mis- taken, the significance of anemia true in the case of the anemias.

NATIONAL HEADQUARTERS
SELECTIVE SERVICE SYSTEM
21st Street and C Street, N. W.
Washington, D. C.

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. However, deferment is not available 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. There 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

EMBEROLOGY
Fetal Physiology

The most superficial observations of normal 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. The latter was made in the first of this series of articles (Log Book, September 1941) to the fact that at any instant in the development the embryo is an individual, complete at the moment, but subject to change in the course of time. 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 organs, let us not confuse the function of the embryonic organ, which differs structurally 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 organization at that time; as the fetus grows and 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 tissues (Continued on Page 3)
We are glad that everybody arrived safely from snowbound vacations. We hope that these vacations will be 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 honor 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 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.

The Delta is 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 Sebold's home. The meeting was well entertained, transacted such important business as the election of officers for the new year, and exchanged the various gifts. The most appropriate and valuable of these doubtless, was the presentation of a booklet for defense savings stamps. We are happy to have 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 see you there. We are eager to have you there, 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 our classes? We are happy to have new members and welcome them into the Omega Nu Omicron. We extend greetings and best wishes for the New Year to the members of the profession and families and friends who have gone before us.

The first scheduled meeting of the year was postponed due to the inclement weather. Instead we held our first meeting, new year January 13th, at the East Des Moines Clinic. The program chairman for the evening was Dr. Max Ross, treasurer. 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.

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. The Gamma chapter is bringing to a close a very successful year by having senior seniors with a banquet on January 15, namely: Donald Brall, William Ferguson, Marvin Frantz, Jerome Bobb, and Patrick Wood.

The scholastic awards this year will be given on the evening of January 14, 1942. We would be very happy to have any of our alumni present.

The fraternity will sadly miss the unscheduled meeting of December 4, 1942. This meeting was held to give those alumni who were not able to be present at our regular meeting, the opportunity of wishing the school full support to them. Congratulations, fellows.

We extend greetings to our alumni present.

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, Belden Bihon, John Haller, Thomas McWilliams, Edward Mossman, Frank Nasso, Gerald Rosenthal, Jack Shaffer, Charles Steffen, Sloan, Kelsey and Fischer. Des Moines alumnae banqueted at the meeting and we expect her back in a few days.

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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, 75.6%; Type III, 11.6%; Type IV, 10.6%. 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 arises 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 applications 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 practicality 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 and Senior 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 College 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 though the ordinary understood, whereas the second is more properly regarded as a study of fetal ecology.

Although the problems as outlined are easily visible, their solution are not so evident. Social and technical reasons it is not possible, except under extraordinary circumstances to have available human embryos for observation or experiment. The bulk of the pertinent data must therefore be derived from animals, and by numerous instances, to be cited here, 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 body of the mother. The former is exemplified in the species. The latter difference implies variability of placental structure, period of gestation and degree of development accomplished during the gestation period.

There is an old saying, "great trees from little acorns grow." I question whether anyone concerned in the initiation of the Public and 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 the enthusiasm and the historic spirit of its members has become an activity of outstanding importance, in the American Osteopathic Association. Its work relates directly to the public needs of the profession 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 of 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 this program possible the committee has conducted a survey among the osteopathic profession. 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 serve the public as the committee has been willing to encourage our osteopathic college. The P. & P. W. committee has decided to throw its strength behind this formost 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 being able to offer osteopathic services 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 your check to these funds, no matter how few or how much. The P. & P. W. committee has decided to throw its strength behind this formost 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 having osteopathic services available in the capacity in which their professional skills can best be employed.

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—Gordon L. Elliott

WHAT IS P. & P. W.

There is a small, but new subject that was added to the course in anatomy of the University of London, without which the students are handicapped in their study of the human body. 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 serve the public as the committee has been willing to encourage our osteopathic college. The P. & P. W. committee has decided to throw its strength behind this formost 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 having osteopathic services available in the capacity in which their professional skills can best be employed.

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In evaluating the laboratory findings for the diagnosis of anemia we are concerned in particular with the blood group, the amount of hemoglobin, and the specific anti-anemic factor.

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

1. Total red-cell count, possibly 4,000,000
2. Hemoglobin, possibly 60%
3. Color index, 0.62

Such a pattern 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 whole blood, 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 100,000. To maintain the hemoglobin-hemoglobin balance, 1 trillion are destroyed daily and 1 trillion manufactured in their place.

The iron administered, can not be added to these cells already formed and in circulation, but the iron will continue to increase the total count of the 1 trillion which will contain progressively more hemoglobin. Therefore, improvement in the blood picture will depend upon the rate at which the bone marrows will be able to utilize the raw material supplied in the form of iron and hemoglobin, and to place in the red cells as they are released. In some patients there will be a definite change in a few days, but in others several months will be necessary to produce noticeable improvement.

In the next article additional cases will be given.

—O. Edwin Owen, D. O.
Home Guard
C. N. Stryker, D. O., Sheldon, was appointed by Governor George A. Wilson on December 18, 1941, as Commander of the Iowa State General Service Company B at Sheldon.

Civilian Defense
D. H. Grau, D. O., and R. R. Pearson, D. O., of Muscatine, were duly appointed 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 up to the date.

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

- Eunice H. Independent, Bu- chanan County; D. E. Hannah, 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, East Prairie; G. Shook, Seymour, Wayne County; A. L. Lundgren, Fort Dodge, Webster County; A. L. Lundgren, Council Bluffs, Observatory; A. L. Lundgren, Fort Dodge, Webster County; A. L. Lundgren, Fort Dodge, Webster 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, December 15, 1941, at 2:30 o'clock, 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 of Professional Affairs; D. E. Hannah, Chairman, Department of Public Affairs; Dale H. Grau, Chairman of the Industrial and Institutional Service Committee; H. A. Graneys, Chairman of the Hospitals Committee; Dale H. Grau, Chairman of the Committee on Defense and Preparedness.

Convention Exhibits
The following companies have already contributed 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.


Osteopathic Hospital
L. W. Jamieson, osteopathic physician and surgeon, and owner and operator of the Jamieson Clinic and Hospital, Wayne, Nebraska, has moved to Sioux City 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 to serve 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 following their respective names:

- Dale S. House, Dubuque, station DKTJ; L. A. Nowlin, Davenport, station WHBF; I. S. Lord, Fort Dodge, station WMAI; L. E. Greuel, Sioux City, station KDKA; W. Peterson, Waterloo, station WMT; Leo Sturmer, Shenandoah, and A. L. Lundgren, Fort Dodge, 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 public information, the public keynote of which is "Defend Your Health. Keep Physically Fit." The first series of the program is to "Learn to Live Better." President Jordan's appointments are in tune with this nation-wide effort of the osteopathic profession in promoting the general welfare through the medium of a radio program.

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

Applications for Membership
Wm. F. Moore, Gratton; Roger V. Templeton, Grimes; L. A. Ford, Lamont; Dwight James, Sec.-Treas.

Pursuit for a Reason
I would like to make a slight correction 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 it is relieved immediately. Where death of the part develops, the vital area and devitalized also is the end of those nerves that must receive the sensory impressions, heightened, previous, where the and the other products of inflammation. They are the nerve endings and fibers that the cord increased number of afferent impulses and create a degree of segmental hyper-irritability adequate to the immediate phenomenon with the resultant expression in the somatic area of hyper-tension of pain, muscle contracture, hyporesis.

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 physiology to the patient to such investigators as Still, Mackenzie, Head, Hilton, Harvey, Osteopathic College, Dr. G. M. H. Jordan, Des Moines, Leander, Morley, Sheehan, Carmichael, Woollard, Cannon, Marchly, and to our orthodox college, Dr. A. R. MacLod, etc.

The first factor that must be considered is the synapse. Since we were coelenterates we have been utilizing the synapse in which polarity and specific direction of impulse transmission are dominant characteristics. The synapse is the small gap or synapses, and lower forms, plays a more important part. Afferent or associational fibers in direct contact with the receptors of the next neurone but end in synaptic terminals, lowering of synaptic resistance.

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

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Death Claims Dr. Eades

Dr. Ernest Thomas Eades of Bluefield who was a member of the Des Moines Still College of Osteopathy in West Virginia since 1925 died suddenly from a heart attack January 7, 1942, on his way home from the 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 Osteopathic Physicians in the Fall of that year, and immediately began practice at Williamson. In 1933 Dr. Eades moved his office to Bluefield where 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 an attack pertaining to his profession Dr. Eades was a convincing speaker at all State meetings. His rosy smile, hearty handshake and general 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 Anemia

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 the wide scope of conditions that may cause anemia, it is easy to see why it is so prevalent. In order to maintain health and all the vital functions of the body, iron is necessary. Therefore, the importance of iron cannot be overstated.

1. Deficient intake of iron is the first factor for consideration in the condition of 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, anemia will creep into the picture. Anemia is no respector 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. Before absorption can occur, the ferric iron must be changed to the 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 anemia of this nature, rather 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 may be necessary 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.

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 nutrient to the tissues and the removal of 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 the circulatory and embryology. Until the gastrical stage of development has been reached, the 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 cinemographic methods. The initial heart beat consists merely of isolated, spasmodic contractions of a few bulbar ventricular cells. After a few hours the activity of the two hearts increases, and within a few days the heart cycle is established. The atrium and sinus venosus begin to pulsate in that order. As each of these parts is included in the cardiac cycle, there is an acceleration in the circulation.

Engagements

The engagement and approaching marriage of their daughter, Geraldine, was recently announced by the parents of Mrs. D.S. Stockdill, daughter of Mr. and Mrs. D.S. Stockdill of Winnabag, 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.

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 fall semester's programs will be continued 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 with a testing period to determine who enters. 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 profession to enlarge the output 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 Colleges 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 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 is the requirement for entering 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 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.
On Monday evening, February 2, Calvaria Chapter installed its new officers for the current semester. They are as follows: Cerebrum, Irving Ansfeld; Cerebellum, Jack Cash; Medulla Oblongata, Morton Plsek; Pons, Arthur Abramson; Calamus Scriptorius, Daniel Feinstein; Neuraxis, Alvin M. and Calvarium, Norman Kurzer.

Congratulations to Dr. Edward Kantler 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.

THE LOG BOOK

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

There are two new freshmen living in the house, Jacob Yarbor and Elsworth Haynes, and 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 Mungen and Jack Neustadt, 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 followers of this house. So far this has proven most interesting.

-P. T.

ΠΣΓ

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

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

-P. T.

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

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

Rachel Payne, recording secretary, and her assistants attended the meeting for installation at this time. Dr. Rachel Woods acted as the presiding officer.

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

On Sunday, February 15th, the Delta was graciously entertained by the Iota Tau Sigma fraternity at their Senior Banquet. Thank you to the fellows in the house. So far this semester, due to final exams, we are coming up soon and we hope to pledge these new men.

Now all the girls are preparing to inspect the Bowling Tournament—some real competition. Watch to your laurels, boys!

-M. W.

ATLAS CLUB

The Atlas semi-annual senior banquet was held January 15th, at Rich’s Grill. The honors went to Donald Brail, Herman Gegen, and Mrs. Merton Worster.

On Saturday, January 31st, at 5 o’clock in the afternoon, the Delta Omega Sorority held a wedding reception of Mr. Gerald Dierick 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 their guests.

The Golden Gloves boxing matches, which were held at the Shrine Auditorium Monday, February 2nd, were enjoyed by all.

-P. 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. Mungen and Wm. T. Ferguson.

Gynecology—Edward S. Kanter.

Protocly—Wm. T. Ferguson.

Anatomy—Edward S. Kanter.

-H. C. Secy.

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 low in iron. In the ninth month it is approximately 130. There is a marked, though unexplained reduction in rate during passage through the birth canal. The rate immediately after birth is approximately 112. It is postulated that the rate of the reflection of the vagus into the heart is to function normally there is very little difference in the incidence of anemia, although women.

4. Defective assimilation of iron and use by the body in the building of the hemoglobin molecule. The reduced density of the bone-marrow completes the chain of events. As mentioned in Article Number IV, the bone-marrow is unable to produce 1 trillion cells daily to replace those which have lived out their life span. The bone-marrow is not supplied with the necessary raw materials, the red cells will be turned out with diminished 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.

Blood is no more than any other organ of the body. It is one part of the correlated systems. Infectious diseases, other conditions of the body, may suppress the bone-marrow and be the etiological factor in anemia, even though intake, absorption, increased demands and assimilation do not enter the picture. A great deal of 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 much of greater value if we take time to interpret it in the light of the body function and then act 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 the second to beat. The problem of the sinoatrial region which permanently retains its function as pacemaker is not the same as the heart rate during the pregnancy. It is well known that the first heart sound is distinct, the second only just audible. This is the result of the rate which is under control of the sympathetic system rather than the parasympathetic as in the adult. The first heart sound is a louder, more pronounced sound than the second due to direct action of the sympathetic system through nerves, whose cardiac functions have not been established at this time. The pressure on the atrial wall 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, irritation of the umbilical cord produces a marked bradycardia, due, presumably, to asphyxia of the pacemaker region. Although physiological chemical changes in the blood of the mother do not directly influence the heart rate, nevertheless uterine contractions are known to produce fetal variations. Because of the importance of cardiac innervation, thus precluding the operation of the Marey, Bainbridge, or Beart reflexes, we may assume that the variations in fetal heart rate are produced as a result of mechanic pressure on the atrial wall of the heart is correlated with the development of the vagal nerve supply.

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(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-up of the regular work done in the class of Medical Military. It is planned to include all the students in the college from the beginning Freshmen to the upper Seniors. The training will incorporate the following subjects: 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 that the patient may be moved without additional trauma.

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

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

It is planned to have the actual materials published 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, while the 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.

The Log Book

The Log Book
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Editor... Richard F. Snyder, B. S.
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Osteopathy Without Limitation

Special Program
For Civilian Defense

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 statement regarding the reaction to infection. In the 68 years since then, 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 representatives saw how scientific fact had many Brutuses, many Judases, and Quislings. Through it all has rolled on, like a broad highway, the pure science of Osteopathy. At times it is evident that progress was bogged down from many riding along, taking the golden eggs, giving no true effort to repl envelop the blood and ligaments from which they derived operational value. The destructive remark may be quieting and they are meant to be so. As Dr. Becker so often says, "It is time for nothing and it takes a lot of doing."

The treatment of lesion pathology is directly related to the generalities given above. Have we asked ourselves when meditating on osteopathic treatment, how much time 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 manipulation is 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 with any kind of assurance. 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 to the entire membership of the osteopathic profession and the 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 measures determined by our Government.

Get behind the colleges in their efforts to serve.

A. D. B. D. O.

In pursuit of a reason, we will probably learn enough to understand a few more of the directions he gave to us.

—Byron E. Laycock
EMBRYOLOGY

(Continued From Page Two)

In type to that of the adult with a apprecoration of activity on the right side of the heart. This is considered the most anatomical observation that, at birth, the right ventricle outweighs the left by about thirteen to one. The predominance of the right side of the heart, characteristic of the adult, is not attained until the second or third postnatal 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 the infant, there is a profound increase in arterial pressure, believed to be accounted for by sympathetic nervous system and cardiac dilatation. The afterload of the reflexes responsible for these effects is thought to have origin in the diaphragmatic and inspiratory musculature. Such early postnatal cardioacceleration, even though transitory, is very impressive. Its importance and the intervention of the heart (or at least functional!) as the diaphragmatic and sympathetic fibers are established cardiac connection.

Ventricular pressure of late human fetuses is approximately 45 mm Hg. Since both arterial and venous pressures vary with uterine contractions, uterine motility should not be neglected as a factor in ventricular 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 immediate after birth is 150 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 blood is added to the blood in the infant; at half-term, on the other hand, the blood is divided about equally between fetus and mother. This is explained of course, by the fact that the fetus grows after midterm at a much faster rate than the mother. It is interesting, in this regard, that the rate of flow of blood through the umbilical circuit in the last pregnancy is twice that at half-term; moreover, there is a virtually identical increase in the flows through the superior and inferior sides of the placenta. This finding points to the necessity of maintaining adequate uterine artery blood flow during the last months of pregnancy in order that the nutritional respiratory and excretory exchanges in the fetus may be accomplished.

There are three main theories about the course of the fetal circulation after birth. Each of these involves the degree with which (1) the degree of mixing which occurs in the heart between the inferior and superior umbilical streams, and (2) the degree to which the pulmonary circulation functions. The classical theory of Sabatier, assuming the fume of the umbilical veins return approximately as much blood to the heart as the umbilical vein, at least in the lower half of the body, seems to be the most likely one. However, there is no evidence that the lower half of the body must receive less oxygenated blood that the heart and upper half of the body. Obviously, the first major occurrence at birth is the cessation of the placental circulation. The umbilical arteries soon contract, allowing no more blood to leave the fetus. About 50 cc of blood will reach the heart in the first minute after birth, and approximately 100 cc in the next 30 minutes.

As soon as the umbilical vessels reach the heart, the inferior vena cava cannot be presumed to expand immediately. The pressure in the vessels below the umbilical arteries is possibly accommodated by opening up capillary networks of the newborn, in no muscle, as a part of the work of the infant, including the maintenance of tone.

Patten and Tolmin, by measuring the orifices of the vessels entering and leaving the heart, arrived at the conclusion that there was probably an appreciable circulation from the umbilical arteries to the placenta. That conclusion is supported by the following, totally unrelated sources of evidence. (1) The Fe and Hb content of the umbilical arteries of the newborn is normal. (2) The umbilical arteries of the newborn are found in the right and left ventricles, Pohlmann and Kollog concluded that there was some mixing also at the foramen ovale. (3) If there is no mixing there is a positive return to the left heart occurs the way of the pulmonary veins. Now, if equal extravascular accretions of the foramen ovale results from an increased pressure on the left side of the heart. This is brought about by way. With inspiration a negative intrathoracic pressure is created, lowering the peripheral resistance in the large vessels and the right ventricle. The ventricular systolic pressure therefore decreases. The left ventricle becomes more powerful, with increase in systemic vasomotor tone. With increased flow through the lungs, left intra-atrial pressure will increase, thus permanently closing the valves of the foramen ovale. The ductus arteriosus now closes, in which this is accomplished in the human is not understood. Intimal pads are present in late fetal life but it is thought that they occur by a process similar to that found in endarteritis obliterans. Patency is frequently observed at birth, but it persists at time. The occurrence of this condition for several years is not rare. Such a condition will be called endocarditis and throws a greater load on the left ventricle, leading to cardiac decompensation. The ductus arrectio closes within a few days of time, perhaps due to decrease in cardiac output, or to decrease in activity of the ductus itself.

Hugh Clark
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 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

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 Glocosuria and Ketonuria.
2. Blood chemistry study, as blood sugar and blood lipids especially cholesterol.
3. Glucose tolerance.

From the laboratory standpoint (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 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 largely by the direct transfer of metabolic materials to the embryo from uterine sinusoids to the syncytiotrophoblast 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 placental circulation and 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.
THE LOG BOOK

ΣΦ
The newly elected president, Robert Bennington has the fraternity functioning as a unit once more. In... the new freshmen. Gail Boyd and Jack Yarham of Lauri's make up the member-teams. Landis, John Link and Cy Deslorbari, Gustav Peterson, Richard Crotty, Herbert Harris, Patrick Ostrom, and Mrs. Laycock extend an invitation to spend a few minutes with the residents who are not members of the profession. We wish all who attend the meeting well. Dr. and Mrs. Schwartz, Drs. George Widney and Robert Booth, Douglas Waters, and the presence of any quantity of the alkaptonic acids, or the conjugated glycuronic acids, even on moderate, will yield a positive reaction.

In the presence of increased urine output, an elevation in the specific gravity, and the presence of reducing substance in the urine, the presence of triplet of Benedict's reagent is considered to be glucose, careful study must be made to rule out the possibility of diabetes as records show of persons of six persons showing a definite glycuronuria is proven to be a non-occurrence. A deficiet in carbohydrate metabolism results in an impairment of the normal fat metabolism and the appearance of fatty acids in the urine that may be attributed to the incomplete oxidation of the fatty acids. These will include: acetone, aceto-acetic acid, and beta-oxo butyric acid. All of these substances may be demonstrated by the use of a propionate beating the most frequently found. It should be remembered if there is no ketone and the other by products of fatty metabolism are also indication of carbo-hydrate deficiency and other allied conditions.

The same factors influence the choice of method for the evaluation of the blood sugar as did the older methods did little to exclude the non-sugar reducing sub- standances. The newer procedures utilize a filtrate with pure and no tin-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 it may be less than that of normal range. The fact remains in the diabetic we are dealing with improper utilization of normal blood glucose; and a more rational approach would seem to be the determination of the glucose concentration one hour after meal.

The Glucose Tolerance Test
The reliability of the glucose tolerance test has been question- ed by many authors, however little doubt remains, that with careful evolution, the test may be relied on. In principle the...
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 per cent. (3) The sugar level will return to normal in a period of two hours. In the presence of diabetes the results obtained will generally be quite distinctive: (1) The fasting sugar level will be above the normal level. (2) The highest concentration will exceed 170 mg per cent, 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 Efron one stage 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 is 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 per cent with an average of 150 mg per cent. 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 of the blood. The most useful way to follow the effect of insulin administration is to follow the cholesterol level. While the cholesterol level does not remain at normal level in the diabetic it is safe to assume that the fundamental disorder of metabolism is present.

The laboratory uses the Lubiou method of estimation, using whole blood. This method is reliable as it is simple, and the possibility of error through frequent dilution and transfusion 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 disturbances and the result of reflex arc expression.

The macroscopic and microscopic changes in the lesion area are those of either or both: 1. Direct trauma or 2. Soft tissue strain and chemical myositis. There is a close relationship between these two things we call osteopathic lesion pathology. The lesion may be acute or chronic. It may be caused primarily by one of the following: 1. Secondarily by altered mechanics or reflex arc disturbance. The chain of progressive changes that result in the lesion is fairly much the same whether the lesion is primary or secondary and is determined by the trauma. The maximum effect of the trauma is first on the muscle, and later on the other tissues. If the lesion is due to compensation mechanical factors the inflammatory changes develop to an acute degree. Each of these 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 involved whether the lesion was primary or secondary unless an area of direct trauma were cut out accidently. Early then the lesions are visible. The increased intense capillary hemorrhage and venous rupture that would be absent in a reflex or compensatory lesion. The capillary damage would be distributed in gradations with no definite line of demarcation. Early in the traumatized lesion there is the element of sudden hemorrhage, rupture of cells, local intense capillary damage, jumbling of articular surfaces, impingement of synovial membrane. Local trauma may cause a temporary paralysis of nerve fibers, and this paralysis may last for three or four days there for there may exist an hypermobility. The appearance of this phenomenon is usually segmentally supervised protective muscle tonus become increasingly traumatized by this reflex arc hyperirritability. The early reflex effect of this traumatic hyperirritability is great and a minority of lesions remain in this phase. The other areas of hypermobility may remain compensatorily hypermobile for days or weeks.

Usually however, with the above mentioned traumatic factors there is a marked mechanical stimulus to the muscle and itgruntually and immediately undergoes contractual spasm.

The traumatic rupture of the connective tissue, capillary damage, hemorrhage, etc., results in the liberation of Boyd's histamine, Histamin. Vasodilation results. One or two things happen. Either the muscle tissues relaxes, the motility factor facilitators V & L return, and the active hyperpermia neutralizes and repairs the results of the trauma; or if the pressure is too great, 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 hyperactive effect maintained by a state of V & L congestion of muscle joint motion and muscle contraction and relaxation combined with vasodilatory movements in the facilitation of V & L return. From here on the pathology then becomes dissimilar to that that results from another etiological factor except of course in those few aspects of the muscle joint motion.

In a reflex or compensatory lesion the neuritic factor is manifested first. The processes of the production of this neuritic factor is a direct cause of a gauze or change of the somatico-somatic reflex arc has been touched upon and will be taken up in more detail. The segmental hyperirritability, the lowered synaptic resistance, the capililary and synovial membranes 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 a stimulation to the muscle producing work and a stimulation to the blood vessels, the chemical factor playing a considerable importance. The prolonged ischemia and the neurologic contracture of the muscle are part of the lesion but the absence of the relaxation phase disturbs greatly the reformation of glucose from lactic acid and the hydrogen of the blood produced is stored and is cellularly and chemically traumatic. It is a maintaining factor and resulting to further physiologic discord and subsequent pathology. The contracture of muscle if uninterrupted will result in an obstacle to the V & L side and maintains the storage of the acid radicals that render the sensory and motor irritability and canalizes the somatico-somatic and somatico-vascular reflexes further. Here the chemical factors due to fatigue toxins will cause a liberation of Boysdem H substance and vasodilation will occur. If the muscle will relax and permit motion to facilitate return then the active hyperpermia will usually repair. If however, the stimulation to the muscle is maintained then the active hyperpermia 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. Too great a pressure impels V & L return and causes a continual increase in the concentration of the acid products of the cellular metabolism normal and abnormal.

Muscle tissue has a lower pH in most tissues and the H ion concentration in most tissues of pathological importance in several different ways, in the lesion areas of hypomobility and hypomobility the pH is lowered due to fatigue toxins will cause a liberation of Boys dem H substance and vasodilation will occur. If the muscle will relax and permit motion to facilitate return then the active hyperpermia will usually repair. If however, the stimulation to the muscle is maintained then the active hyperpermia only contributes to the congestion produced by the failure to facilitate return.

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THE LOG BOOK

Civilian Defense

Vocational Guidance
Mary E. Golden, D. O., vice president of the Iowa Society and secretary, conducted an orientation program on Vocational Guidance at the meeting, as well as a student selection and guidance program through the divisional societies represented.

The meeting will be held at Hotel M. Tueckes, Davenport, Scott County, on February 1, 1942, conducted by Dwight S. James, secretary and president of the Iowa Society.

Kossuth County, has been named chairman of the Log Book:

"Diagnostic Points for Your Central Nervous System" and "Continued From Page One"

Embryology
formed in yolksac. The number at first is relatively small and the hemoglobin content is low. However, there is a rapid increase in number of corpuscles as the hemoglobin present in each corpuscle, and the hemoglobin content per corpuscle and total hemoglobin will be greater than in the adult per unit volume of blood. Thus, the anti-pernicious anemia factor of Castle is in large measure responsible for the growth of the fetus.

When the embryo reaches the uterine the uterine mucosa is already intensely hyperemic. The maternal placenta develops well, since the daughter part of the placenta in order to provide nutrition for the embryo during the first three weeks of gestation. As a result of the development of the placenta, the early pregnancy is highly oxygenated, whereas, toward term when the oxygen has been removed. Three important changes govern the efficiency of placental oxygenation of fetal and maternal blood:

1. Adaptation of fetal hemoglobin.
2. Rate of fetal blood flow.
3. Rate of uterine blood flow.

The blood in the fetal placenta flowed parallel to the maternal blood through the villi, would come into equilibrium only when the maternal is functional as a vessel of the umbilical cord. Oxygen transfer occurs in a direction opposite to that of the maternal blood. Umbilical blood therefore comes into equilibrium with the maternal blood 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 oxygen efficiently with essential materials as well as to remove their waste products. This is done by in communication with the flow of 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 respiratory cycle. Oxygen uptake far more readily at low partial pressures than does the adult hemoglobin, though it is later than that of the adult in a atmosphere of unlimited oxygen. This fact is of obvious importance to the human fetus, when it is remembered 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 oxygen less than that of the adult and this deficiency is litte 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 oxygen must use up less oxygen; (2) the total areas of the placental villi is only about one seventh that of the lungs 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. Moreover, because of the restricted intrauterine activity the problem does not become acute. It should be added that carbon dioxide is more easily released by the fetus than oxygen, is more easily taken up.

By actual measurement it has been shown that fetal blood is a content of the oxygenating agent during and just after contractions of the uterus. It is therefore important that tone be maintained in the muscular tissue of the uterus during the last stages of pregnancy. Also, the normal deple-

Respiratory Movements
The first movements of breath- ing occur toward the end of the third month of pregnancy; they are convulsive, jerky movements simulating the respiratory movements of the infant.
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. These processes in which laboratory methods may be of help either in diagnosis or control will include:

- Acute non-necrotic pancreatitis.
- Acute necrotic necrosis.
- 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 pancreas is 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 F. E. Brodie, the blood amylase percentage is of greatest value in differentiating acute and chronic pancreatic disease. Involvement of the pancreas in an acute or sub-acute inflammation will give rise to a transient increase of upper diffuse abdominal pain, nausea, vomiting and some amounts of visible jaundice; so general are the 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 the increased blood amylase at the time of acute symptoms 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 which is to be held at Fort Worth, on April 30 to May 2 inclusive. Dr. Becker will have several appearances upon the program discussing cardiac diagnosis and osteopathic therapies pertaining particularly to some of the more common heart involvements. The great importance of early treatment 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.

(Continued on Page 3)

Emoryology

**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 polyhydramnios, when it had proceeded to the point of causing maternal discomfort. As might be anticipated from previous references 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 the ability to indicate that gastric motility has been established as early as the fourth or fifth month. Regurgitation into the thoracic cavity of the fetus 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 month, and it is believed to be of neurogenic origin. Intestinal movements during the last quarter of fetal life are a smaller extent, in the lower part of the small intestine. Material passes through the duodenum so rapidly that absorption cannot occur. The action 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 second trimester the fetus discharges faeces through the anal orifice. The method by which this occurs is not known. Feces are not present in the amniotic fluid, and it is believed to be of nutritive origin, possibly representing that part of the intestinal contents not absorbed by the fetus. The chief source of the material is the maternal circulation.

(Continued on Page Four)

Birth

The many friends of Dr. and Mrs. Richard Rogers will be pleased to hear of the arrival of a daughter, Amette Jeanne, on March 31. Mr. Rogers is lecturing to the Red Cross training group in addition to his regular classes this semester.
Iota Tau Sigma feels that it was very fortunate in obtaining Mr. Robt. Blakely of the General Hospital.

Plans are being made to hold first degree initiation ceremonies in the very near future.

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, Estelle Hatt; secretary, Mary Jane Carhart; treasurer, Gertrude Mosman. It was decided that the banquet and dinner will be held on Wednesday evening, May 1st. Miss Zauder, secretary, Miss Jane Carhart; treasurer, Gertrude Mossman. It was decided that the banquet and dinner will be held on Wednesday evening, May 1st.

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

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 Anhsfeld on his award of the Dr. L. Williams key.

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

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

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—yes, we did. On a Saturday night the 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 support when we play the faculty—do we have it?

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 win. 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 contentious 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.

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 was teaching, this subject came into my mind and out of them you can glean everything you can on the subject. 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.

Have you investigated the financial stability of the region and the percentage of people with whom you wish to mingle?

What about school facilities and the community the nearness of a city where articles other than the staples may be secured?

Do you expect to make this your permanent home or is it just a stepping stone?

If you have a family does this move meet with their complete approval? (It may be a job for a man only.)

Can you afford to lose what it will cost to make the move?

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 anything definite is done. With the few comparatively, who are practicing osteopathy (less than ten thousand), the opportunity is 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-Illiac lesion and according to a well known anatomist no two people would agree exactly on a place to live and practice and raise a family. You will have to locate a ground, get all of the information you can on the several places you think you would like to 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 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.
THE LOG BOOK

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. Very Stoker acted as master of ceremonies. Musical numbers were furnished by the quartet—Gerald Rosenfield, Gerald Boettcher, Scott Heatherton, Bob More—the "New Yorker," Jerry Zauder, the "Old Timer," Scott Heatherton.

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 students, the M. C. introduced the others.

R. C. Rogers, Mildred Weygandt, Mary Torriello, E. Mac Adams, 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—dang, yes, we'll need your help.

up we 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 amylase content, may be explained by the passage of the enzyme into the lymph due to

The mechanism responsible for the increased blood amylase may be explained by the passage of the enzyme into the lymph due to the abnormal development of articular surfaces. A thoracic type facet not infrequently occurs in the lumbosacral articulation. This will permit a motion on one side that is restricted by a lumbar facet on the other. A diaphragm's physiology may be traumatic on the other.

Thoracic facets may appear in the middle of the lumbar area or in the thoracic or cervical area. They are usually unilateral and therefore introduce diagnostic conundrums of traumatic hypermobility.

P a r a l y t i c hypermobility. Paralytic hypermobility is due to increased development of articular surfaces. A thoracic type facet not infrequently occurs in the lumbosacral articulation. This will permit a motion on one side that is restricted by a lumbar facet on the other. A diaphragm's physiology may be traumatic on the other.

Thoracic facets may appear in the middle of the lumbar area or in the thoracic or cervical area. They are usually unilateral and therefore introduce diagnostic conundrums of traumatic hypermobility.

P o s t u r a l hypermobility. Postural 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. Since they hypermobility exists then the resultant hypermobility in the other articulations is the price one must pay for the lesion. The price one must pay is usually a marked reflex arc disturbance. Frequently the effect of this trauma is secondary lesion pathology with contractural myositis appearing at the previously hypermobile articular areas.

Project or concentration hypermobility. Is similar to the lesion or local hypermobility except that it falls between areas of general hypomobility and therefore assumes an unusual motion as possible that should spread over an area of a half dozen segments. We see this effect when theD. B. Rogers and Carl Waterbury.

An increase in the blood amylase is probably due to trauma or infection. It is probable that only 2 to 10% of lesions are primary in etiology and that all the rest and many of those few that are primary to begin with have been added to them some of these factors and are therefore of such a nature that we have to forfeit our despair. The diagnosis of the etiologic element before we can make any valuable interpretation of whether the lesion is primary or secondary lies the future.

—Byron E. Laycock

Convention

"Travel exclusively for pleasure, and the nation's insatiable desire for all kinds of outdoor life must be curbed . . . " Some are quoting this and assuming that it means a small attendance at the 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 the future of our profession, can not come within an "insatiable desire for conventions of all kinds.

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.
Embryology

(Continued From Page One)

fourth month the intestines are found to contain a composite substance called meconium. It consists of degenerated epithelium fluid and various secretion products, particularly bile pigments of the fifth month. The material is naturally accumulated by the fetus, partly because of swallowing amniotic contents, and the amniotic fluid is practically eliminated after. Defecation in amnio may occur, however, much earlier than this; it has been seen in large of hysterecmy under local anesthesia at four months gestation. It is thought that it is brought about, along with general visceral peristaltic activity, due to a decreased pH attendant upon increased carbon dioxide tension. Oxygen deficiency does not 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. The fetal liver at this time is active in producing, during the fifth month, bilirubin is produced by the liver, and biliverdin is apparent in meconium a month later. The mechanism of escape of bilirubin to produce the hyperbilirubinemia of icterus neonatorum is unknown. The large size of the fetal liver suggests a peak of several important prenatal roles; these are associated with hematopoiesis, bile formation and several phases of metabolism.

Fetal Nutrition

In the human two methods of nutrition necessarily exist—the first, a histotrophic type, before placental occurrence; then the second after the intimate association between embryo and mother. Nutrition may therefore be divided as follows: A. Embryotrophe

1. Histotroph
   a. Transient endometrial de-tritus, etc., for the implanting blastocyst.

2. Hemotroph
   a. Diffusible substances requiring resynthesis:
      (1) Cases, dextrose and inorganic compounds.
      b. Large nitrogenous molecules requiring resynthesis.
   c. Substances such as lipids, truly absorbed by trophoblast.

Placental Permeability

This important subject has been given a great deal of attention, many details because of the extremely variable structure and perfection of placenta which is the several species of animals. Not only is the mode of attachment to the uterine different, but also the material structure differs from the extreme of epithelio-chorial through synvedecmoschial, endotheliochorial and hemo-chorial (human) to hemoaedothelial.

The basic principle of placental activity seems to be utilization 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 important 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 the 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. percent 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 the "fetal store-liver" for the embryo. Glycogen is found here before it appears in the adult liver, but it is confined to the maternal placenta. Glycogen storage is gradually taken over by the fetal liver in the later months of pregnancy. The assumption of glycogenic 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 the term although the amount varies with the diet of the mother. Fetal glycogen is used 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 pathological diabetic conditions 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, glycemia 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 the available data, the fetus appears to synthesize fat, for (1) fat stained with Sudan III is deposited in the stained form in maternal tissue, but in fetal tissue it is colorless; (2) regardless of the degree of saturation of the fat in the maternal diet, fetal fat is saturated; (3) this fat contains more palmitic and less oleic and stearic acids than that of the mother; (4) the lipid content of fetal plasma is 948 mg. per cent, 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 whose 34 are phospholipids. The remaining 16 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) the use of the physiological responses of the embryo itself at different stages. These methods suggest (1) that amino acids freely pass the placental membrane, (2) that a high concentration in fetal blood is maintained, thus its maternal concentration, (3) major synthesis of non-nitrogenous substances early in life. The nitrogen content of the tissues remains quite constant after the first third of gestation. When the fetus attains "physiological maturity," there is no variation in amide, human and cystine nitrogen was observed throughout development, but amino nitrogen increased whereas as nonamino nitrogen decreased throughout development. In the early stages lysine and glutathione increase, but then gradually decline. Arginine, histidine and proline decrease progressively from the beginning of development.

One of the most interesting features of nitrogenous excretion is the elimination of urea and ammonia by aquatic animals, and the formation of non-diffusible uric acid, stored in the alveolar spaces in the form of urate. Man, of course, falls into the aquatic group inasmuch as the maternal bloodstream functions 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. Retention 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 mother may exhibit hypochromic anemia during the first year of life.

Following the fourth month of pregnancy there is a sharp increase in the amount and phosphorus of the fetus, and these items are dependent on both the maternal intake of the vitamin and vitamin D available. Before this time there is little fetal demand on the maternal supply.

—Hugh Clark, Ph. D.
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, as Surgeon in Chief of Des Moines General Hospital, and head of the Department of Surgery at Des Moines Still College 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 augers 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 distension of the blood sugar level—in most cases an hypoglycemic response will be noted. For carcinomas of the pancreas, the laboratory findings are not conclusive unless the tumor is large and an exception. 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 secretory activity of the 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 100 cc jaundice becomes visible in the patient.

The laboratory procedures on the fecal sample will report an increase in the fat content of the stools, will be distension of the bile pigment. In complete 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 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 hyperglycemia (Diabetes). Tumor, involving the islands are not the only endocrinical agent. However, and therefore, the discovery of a low blood sugar requires careful evaluation and study.

The usual symptoms associated with hyperglycemia 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 hyperglycemia occurs:

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

2. The proximal convoluted tubules contribute to kidney function.

3. The proximal convoluted tubules contribute to fetal urine; (Continued on Page 2)

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 to serve in the great War Program.

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 an insistent and continuing demand for competent Osteopathic Physicians and Surgeons. Join with us for a great service, in a capacity requiring a high level of knowledge.

—A. D. B.

EMBRYOLOGY

PHYSIOLOGY OF THE FETUS

Kidney Function

The method of urinary excretion, essential in all life processes, varies considerably. Environmental circumstances dictate to a large extent the method followed. Birds, with no means of eliminating waste, have developed a large allantoic vesicle for storing and excreting urinary waste in order to conserve water. Because of the continuity of the fetal bladder, an allantoic cavity through the bladder and urethra, the amnion also receives some nitrogenous waste.

Phenol red pigment 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 concentrative functions of the tubules were later observed in vitro, when phenol red and orange G were collected in the lumens of the tubules, having been taken from the culture medium.

In summary, (1) the metanephros begins to function at about 9 weeks, and secretes continuously but slowly; (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 the diuretic pressure, amniotic pressure of the fetal blood vessels, carbon dioxide level of the amniotic fluid and renal factors; (4) the proximal convoluted tubules contribute to fetal urine; (5) resorption takes place in the proximal tubules. (Continued on Page 3)

Birth

Born to Dr. and Mrs. Robt. E. Sowers, on January 13, 1942. He has been named Jerry Robert Sowers.
The election and installation of officers for the new summer semester was held at the club on Monday, May 4. The following are the new club officers as follows: President, Lou G. Deer; Vice President, W. Westfall; Secretary, E. Westfall; Treasurer, R. A. Brown; Corresponding Secretary, H. V. H.; and Reporter, James Booth.

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

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 pre- vailing section of the nerve supply to the liver will result in immediate hypoglycemia. The laboratory procedures available for estimation of the extent of hyperglycemia 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 hypoglycemia level at some time after the ingestion of sugar. A typical response will be:

- Fastigting specimen ..... 70mg% Given 100 grams of glucose.
  1 hour specimen ....... 55mg%
  2 hour specimen ....... 50mg%
  3 hour specimen ....... 50mg%

In the employment of the in travenous administration of glucose, it is found that an increased utilization of glucose is apparent. In a typical case, a patient utilized 1.5 grams of glucose per kilogram per hour, in comparison to the average value of 0.3 grams. This represents an increase of 63%.

In some cases, the low blood sugar level may not be demon strated in the serum, because of the glycemic states; in these cases it is necessary to subject the patient to a test to assess normal activity being permitted during the interval, under ordinary cases, 12 hours is usual to reduce the sugar to abnormal levels. It is apparent from the foregoing discussion, that blood sugar estimation should be routine in value, in dealing with the vague and rather inconclusive symptomatology of lassitude, memory-loss and irritability.

Delta Omega 3

At the last business meeting held May 5th, Gamma chapter of Psi Sigma, Benevolent Members, Officers as follows: President, Lou Radetsky; vice president, Ronald Woods; secretary, Joseph Donovan; treasurer, Richard Baynes; corresponding secretary, Harry Livingston; and reporter, James Booth.

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

We are pleased to announce that Doug Westfall was crusader of the last meeting. Congratulations Bill and we know you will be a credit to us.


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 our graduating seniors. 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 seniors all the success in the world. We have spent many happy hours together in Des Moines and shall miss you when you leave. So here’s to you, New Alummi.

ΔΩ Ω

“The Atlas Club" is a term well known to all students of the University of Nebraska. It is a club that has been in existence for many years and is affiliated with the University of Nebraska. The club is known for its social events, such as balls and banquets, and its involvement in service to Osteopathy and the community.

The club's bylaws state that the officers for the new summer semester were elected and installed this month. The officers include President Lou G. Deer, Vice President W. Westfall, Secretary E. Westfall, Treasurer R. A. Brown, Corresponding Secretary H. V. H., and Reporter James Booth.

Marriage

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

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 prevailing section of the nerve supply to the liver will result in immediate hypoglycemia. The laboratory procedures available for estimation of the extent of hyperglycemia 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 hypoglycemia level at some time after the ingestion of sugar. A typical response will be:

- Fastigting specimen ..... 70mg% Given 100 grams of glucose.
  1 hour specimen ....... 55mg%
  2 hour specimen ....... 50mg%
  3 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 1.5 grams of glucose per kilogram per hour, in comparison to the average value of 0.3 grams. This represents an increase of 63%.

In some cases, the low blood sugar level may not be demonstrated in the serum, because of the glycemic states; in these cases it is necessary to subject the patient to a test to assess normal activity being permitted during the interval, under ordinary cases, 12 hours is usual to reduce the sugar to abnormal levels. It is apparent from the foregoing discussion, that blood sugar estimation should be routine in value, in dealing with the vague and rather inconclusive symptomatology of lassitude, memory-loss and irritability.
Osteopathy Without Limitation

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 spend next winter in Michigan (Mich.) College of Osteopathic Surgery at Des Moines Still College and University. 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 was elected a member of the board of examiners of the American College of Osteopathic Surgeons. He is surgeon-in-chief of the 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.

Embryology

(Continued From Page One)

segment of Henle's loop; (6) the placenta is the chief organ of excretion of the human fetus.

Anniotic Fluid

The early amniotic fluid is almost certainly formed by the renal tubular excretion; (5) tubular excretion; (6) the placenta is the chief organ of excretion of the human fetus.

ENDOCRINE GLANDS

Suprarenal Cortex

The suprarenal, although little, evidence that a cortisol-like hormone is produced by the placenta and the hormone may prolong the life of an adrenocortically modified mother. Of greater interest is the x-zone of the fetal cortex which so disproportionately large in the fetus.

Thyroid

Suprarenal Medulla

The adrenal medulla begins at about the seventh gestational month by migration of neural crest cells into the cortical tissue. About the middle of gestation, epinephrine is produced by the glands and coincidentally the tissue acquires its definitive chromatophore and is recognizable in most animals. These observations are contrasted with the late human development of functional capacity of the adrenal medulla, which is thus slightly functional until after birth.

Sex Glands

Male sex hormones can be extracted as soon as the testis is differentiated (about seven weeks in man), and the content from testicular tissue is proportionately greater than that of the adult. The hormone has physiological activity of fetal male hormone is derived from a study of the frequency of twins in cattle, when the blood streams of the male and female twins are conjoined. When the circulations of the fetal circulation are discrete, both male and female develop normally; when the blood of the newborn is the same. Such results may be experimentally duplicated in other animals by the injection of testosterone or other androgens, or by the injection of estrogenic hormones into mothers of human fetuses, with the result that both male and female are produced. The extent to which maternal hormones affect normally developing fetuses is not known, but diminution in size of the fetal testes by birth and secretion of "witch milk" in both male and female are indicative of a true influence.

The Log Book

The Official Publication of the DES MOINES STILL COLLEGE OF OSTEOPATHY

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 Board of Osteopathic Examiners since its origin.

HONORARY DEGREE

Dr. Schwartz was awarded the honorary degree of doctor of science in osteopathy by the Kirkville (Iowa) 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 Kirkville 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.

Some chemical compounds, enzymes and antibodies of the mother are functional in utero. Sebaceous glands are functional and that the hormone may prolong the life of an adrenocortically modified mother. Of greater interest is the x-zone of the fetal cortex which so disproportionately large in the fetus.

Thyroid

Suprarenal Cortex

There is virtually no evidence for an endocrine function of the thyroid in human fetuses of about three months as a lymphoid organ. The experiments of Rowntree, involving injection of thyromorph into several successive generations of rats resulted in more rapid weight gain and a smaller size and greater size of offspring; but these results lack confirmation by other workers.

Physiophius

Neither posterior lobe extracts nor gonadotropic hormones of the anterior lobe, when injected into rabbit fetuses, produced the usual effects on the maternal or the maternal injections failed to appear in fetal fluids, strongly suggest that these hormones are not permeable to these substances.

A pressor substance has been identified in the human hypophysius at six months' gestation. Growth promoting substances from the anterior lobe, however, appear later, and gonadotropic hormones appear the latest to functionally deficient.

Insulin

Islets of Langerhans can be determined exactly; but they are probably 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 maternal insulin, although the hyperglycemia in the fetus may accompany the protection and result in postnatal hypo-
Pursuit for a Reason

We have considered briefly the various pathology in the parathyroid area during its incipency. It is diffuse or local, depending upon the etiology. The hyperplastic process involves a far greater amount of tissue. In fact the etiology is local, and not general in the area—considering even the area of initial trauma in the area of primary lesion. This is an interesting ischémie factor, and one might 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 greater than the intrinsic plus factor. There is an ischemic factor due to arteriole or arterial constriction that is transmitted through the area. Additionally, there is a hyperemic and engorging factor that follows such ischemic phase, and it can not be accounted for as a purely traumatic.

Thirdly, the most commonly found element is a passive congestion of the venous congestion and engorgement of the venous and lymphatic return channels that is parent to a great degree to the vascular system. It introduces another ischémie factor, metabolic disturbances, pH change of measurable amount, acidosis and anoxemia which is the interlude and physiological edema and + hydraulic pressure; marked increase, and increased rate of anxiety, tension, and muscle, and nervous motor units, these being also of a measureable degree.

Fifth, the ischemic factor due to the segmental stimulation. The segmental hyper-irritability is produced by the mass stimulation of the segmental cutaneous nerve, due to local trauma, or the constant irritation of those end plate caused by the inflammatory processes in the area or the segmentally related somatic area. The great number of afferent impulses produced during the contraction of the 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 travel from the sensory coronae to the anterior horn cells through the associational fibers. The motor cells are then activated and contracting the segmentally related musculature. That part of the nerve tissue involved being affected more than other parts of the body. The increase in force and rate of the muscles and parts of muscles are affected more than other parts of the body. The increased force and rate of the muscles produces for normal function a greater amount of oxygen, glucose, and a greater velocity than required to produce intermittent regular relaxation phases. In the lesion area this is prevented by the same factor that produces 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 the spinal nerve causes vaso-constriction in the area. Hence instead of having a normal curve of greater activity of glucose and oxygen there is a reduction in these elements. The primary hyperactivity and the motion factor so essential in venous and lymphatic return, and the products of metabolism are eliminated or accumulated. This is the period of ischemia then exists. The musculature is forced to contract, and at the same time the inflammatory exudate for symptoms. The muscle in etonduction 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 insufficient and lymphatic impaired return. There is due to the ischemia a destruction of cells, and Histamin or Boyd’s 3 substance is liberated.

A vaso-dilation or paralysis of the neuro-muscular mechanism is induced. Active hyperemia that results may neutralize the tissue acidity — restore normal alkaline balance, and neutralize the tissues. The development of the paralysis or the capillary dilatation, and the stage of ischemia due to vaso-constriction and muscle contraction, which is brought about by the active hyperemia that results may neutralize the tissue acidity. Restores normal alkaline balance, and restores the tissue acidity. This is an example of decreased function to most of the visceral, particularly to the G.I. or G.V. tract. This condition, decreased function, decreased secretion, diminished motion or peristalsis, and impairment of the function which arterial suply 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 simply those of the body, but others are due to the action of peprin with HCI and trypsin. Hence it is easily understand why the lesions in the area, and if muscle relaxation phase is present, the venous and lymphatic return facilitated, and the capillary filtration may be reduced. Doubtless in this phase most expressions correct themselves.

If, however, the muscle contraction remains, then the active hyperemia further congests the blood returning veins, and without muscle contraction followed by relaxation the return circulation is hindered. Due to active hyperemia there may be palpable pulsation if a large muscle is involved. 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 active. The pressure increase in pressure due to the arterial wave added to the pressure of edema on the sensory nerve endings produces throbbing pain and 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 active. The pressure increase in pressure due to the arterial wave added to the pressure of edema on the sensory nerve endings produces throbbing pain and 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 active. The pressure increase in pressure due to the arterial wave added to the pressure of edema on the sensory nerve endings produces throbbing pain and 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 active. The pressure increase in pressure due to the arterial wave added to the pressure of edema on the sensory nerve endings produces throbbing pain and the patient is aware of a throbbing pain associated with each heart beat.
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 to chemical, thermal and electrical stimuli before myofibrils are discernible, and therefore before cross-striations have appeared. The 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 earlier 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


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 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.

Dr. R. B. Bachman

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. 332) 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 questionnaire and check list.
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 Rennes 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 Gamma welcome the new men who have entered school this summer. We are always glad to see such students. In particular, we are glad to see Miss Dorothy Baker. Brother in the wedding of Brother Fox and Miss Baker. All the members gave the newlyweds their best regards.

All the students are always welcome. We are always glad to see such large classes as have entered this school this summer. We hope to have a busy and delightful summer.

—H. G. H.

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

Mary Torelli, President; Mary Williams, 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 Seabloom, at Mrs. Dutby's Tearoom May 29th. 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. There were also presented with a small gift. Those present were: Drs. Mary E. Golden, Rachel Payne, Mildred Weygandt, Maxine Seabloom, 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 starting, and although our number has been greatly decreased, we expect to have a busy and delightful summer.

—M. W.

OMCC

The Osteopathic Women's College 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.

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 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.

**Clinical laboratory for blood and urine analysis**

"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 outgoing 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**

<table>
<thead>
<tr>
<th>Instructors' Course (doctors only)</th>
<th>Standard Course (lay persons)</th>
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<tbody>
<tr>
<td>Mon., July 13 3 to 5 p. m.</td>
<td>1 to 3 p. m.</td>
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<tr>
<td>Tues., July 14 8 to 12 noon</td>
<td>2 to 5 p. m.</td>
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<tr>
<td>Wed., July 15 8 to 12 noon</td>
<td>3 to 5 p. m.</td>
</tr>
<tr>
<td>Thurs., July 16 8 to 12 noon</td>
<td>9 to 12 noon</td>
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<tr>
<td>Fri., July 17 8 to 12 noon</td>
<td>2 to 5 p. m.</td>
</tr>
<tr>
<td>Sat., July 18 8 to 12 noon</td>
<td>1:30 to 3:30 p. m.</td>
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**Total 30 hours**

**Total 20 hours**

**Buy War Savings Bonds**

**And Stamps**
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 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 Income of Personality.”

Immediately following the recessional, a reception was held in the parlor of the church, where the members of the graduating class had the opportunity of meeting and receiving the congratulations of many 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 its students. The members of the graduating class extend to them sincere best wishes for success in their somewhat widely chosen fields.

-R. F. S.

Pursuit for a Reason

The processes of inflation as they occur in the leaer area, the means of their detection or demonstration, their effect locally and remotely on the mechanism of the production of that effect are of all major importance. Each cannot be given the intrinsic consideration and deserve a paper in a separate brevity but an attempt will be made to mention each of the factors above given 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 pathologic change in the bone tissue. Actually bone tissue in the lesion area is only mildly altered and there only after the protracted presence of lesion pathology. It is true that certain medullary caneals

(Continued on Page Four)

THE LOG BOOK

Senior Awards

Anatomy

Obstetrics

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

Gynecology
Charles S. Randels.

Embryology
(Continued From Page One)

Stratifying muscular competence; neuromotor activity, developed first in the late fetal life 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 the internal connections, constituting the 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 organism has been complicated.

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 distal and motor, both reflex nature, which can be elicited in a variety of ways beside direct stimulation of the face or forelimbs. The 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 reflexes of the body are becoming 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 from the spinal and medullary so that caudal stimulation of an 8-9 week fetus may result in (a) local reflexes, (b) reflexes involving motor efferent 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 the 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 neuron fibers are those of the reticular formation of the medulla which send fibers into the cord. Here they differentiate and extend caudally, forming a part of the medial longitudinal bundle. These are tectal neurons which contribute to the tectobulbar and tectospinal tracts, differentiating in about the 5th week of man. Four groups thus developed: (1) local inter- and intrasegmental elements, constituting the gray bundle; (2) the reticulo reticulatopical tracts, (3) medial longitudinal fasciculus and (4) tectobulbar and tectospinal tracts.

Spinthalamic fibers are next formed, and shortly thereafter, the lacunomacular fibers appear. It then becomes evident that, while the cerebral cortex is important, the cerebellum is of prime importance. The cerebral cortex, however, that the cerebrum exerts any considerable influence over lower motor activity. Some have even felt that myelination is essential for function in the tracts of the brain as well as elsewhere but this does not seem to be truly myelination but rather the order of development anatomically may be correlated, but myelin is not a physiological necessity.

In spite of the early neuro-muscular abilities of the fetus, little movement occurs in the months until the fourth fetal month. This lack of movement may be explained by inadequate intraterine stimuli and also by the high threshold in the fetal central nervous system. It has been observed in lower mammals that spontaneous motor discharge or activity does not occur;afferent fibers and completion of reflex pathways are usually necessary. This pressure may be lowered by reducing the oxygen content of the blood to the fetal brain, without actually producing asphyxia; the physiologic discharge reflexes then develop. This may be a guard against premature birth.

Fetal Motor Reactions and Reflexes

Respiratory movements have been described previously (Log Book, March, 1942). Likewise, sucking and swallowing mechanisms are completed well before birth, 9 weeks opening and closing of the jaws is possible, and shortly after this, the tongue may be protruded, although in the third trimester for several days later. Lip movements have been seen at about 10 weeks. It would be safe to conclude that the complete, rhythmic, sucking movements can be made in the fourth month. At this time leg movements are rhythmic and improve as gestation progresses.

The components essential for locomotion are, (a) flexing, planta flexus (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 prematurity.

Flexion of the fingers following tactile stimuli on the palm occur at 11 weeks; at twelve weeks, the same stimuli elicits flexor phenomenon. However, sustained gripping does not occur until about 6 months development.

In the early fetal period spontaneous movements of the hands of great toe has been seen. The Babinski phenomenon could be observed in the 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 may be found in late fetal life. It is questionable whether proprioseptive fibers are functional as such in early fetal life. Motorized nerve endings do not appear before three months. They probably develop for many fetal movements in the last half of pregnancy.

Taste and smell are developed though in a limited way, and may be found 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 before birth, although both taste and infant are sensitive to sweet stimuli.

Sight 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 for light and dark, although in the latter case, it may be the chemosensitive trigeminal fibers rather than olfactory fibers which are responsible.

(Continued From Page One)

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 nature of the material and the variety of experiments and the conclusions used in the pertinent studies virtually necessitate the conclusion of some errors in these reviews. It is hoped that Prof. W. F. 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 a war for the defense of 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.
Additional Committee Appointments

President Golden has appointed J. O. Ewing, Bonaparte, Chairman of the Special Committee on Maternal and Child Health and L. F. Malm, Chairman of the Council of Defense and Preparedness.

Dr. H. L. Gulden, Chairman of the Ramada that article, appointed the following membership subcommittees: C. K. Riser, Maquoketa, District I; C. R. Ayers, Grant, District II; J. J. Ewing, Bonaparte, District III; J. R. Forbes, Swne 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, will take part in the (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. Stilley,主席. Speakers on the last day of the course were: Emerson G. Stephenson, St. Louis, Mo., assistant director of the department of water safety and accident prevention, and Commodore W. E. Longfellow, assistant national Red Cross director Washington, District C.

Local physicians who became instructors through a similar course conducted last February gave the session quite a warm reception.

Those who attended the three-day course are: Clive R. Ayers, Grant; V. C. Corson, New Mexico; John H. Broaddus, Newton; Harry L. Cloyd, Blakesburg; L. L. Factor, Des Moines; D. C. Gigli, City; C. A. Patterson, Davenport; Groves, Waterloo; H. L. Gulden, Ames; J. A. Hirschman, Cherokee; R. W. Jack, Grinnell; W. W. Jolley, Ottumwa; P. Kelsey, Des Moines; J. A. Kline, Malvern; R. R. Landry, Oskaloosa; J. A. McNerney, West Des Moines; C. W. Millard, Lake Alwood, South Dakota; W. F. Moore, Grafton; Theo. M. Tuckes, Davenport; C. D. Reynolds, Fairfield; S. A. Whetstone, Wilton Junction; Harry E. Wing, Ottumwa; C. E. Worster, Laurens; T. R. Griffith, Des Moines; J. H. Hansen, Ames; Rachel Woods, Des Moines; B. K. Johnson, Fort; Martin Biddison, Nevada; H. S. Jordan, Davenport; J. H. Reifenstal, T. S. Clark, Bradgate; Lillie M. Dunlop, Pocahontas; B. D. Elliott, Osceola; F. M. Geineker, Sioux City; James E. Gray, Newton; Marvin E. Green, Storm Lake; Harold Jennings, Mason City; Lydia S. Jordan, Davenport; Nellie D. Kramer Pella; E. J. Luebbe, Des Moines; Fred A. Martin, Murray; Harold D. Meyer, Algona; Grace D. Nazarene, Dallas Center; H. M. Patterson, Mediapolis; K. B. Riggs, Marion; W. J. Woodward; T. J. Scholl, 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. Whetstone, Wilton Junction; 3. H. D.taken.

The House of Delegates of the A. O. A. will be called to order at 11:00 o’clock Saturday morning, October 17, 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 at Jefferson on Sunday, held in conjunction with the sixty-sixth annual convention.

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

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

American Association of Osteopathic Examiners

D. E. Hamman, Perry, President of the Iowa Association of Osteopathic Examiners, will preside at the meetings of that organization which will be held during the American Association of Osteopathic Examiners' forty-sixth annual convention.

In the column of the pillars there are similar changes due to the nutritional deficit during the first years of life. After Assman, Jr. has given the names of the following expository 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. Winabarger, Keosauqua; James R. Shaffer, Mason City; and B. H. Billman, Manchester.

Personal

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, holds a position in the office of Dr. Fred H. Wing, 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, Ankeny; R. W. Combs, Thompson; H. M. Frederick, Ankeny.

Pursuit of a Reason

(Continued From Page 3)

issues are quickly affected as the disease progresses. There is little equipment that demonstrates the lesser changes in bone tissue until they progress to the degree of visible to severe osteitis deformans.

These changes in bone tissue result from long standing chronic trauma and trophic disturbances but they are not noticeable until their tissue effect is microscopic. It must be remembered that there is a result of long standing or chronic sprain of joint surfaces with or without a super-added general tremor 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 motion, or as a result of the articular tissues and true ankylosis.

The changes may appear as hypertrophic arthritis with no reduction in joint space, no ankylosis, but bunion formation of the margins of the articulation. Frequently there is a combination of these two changes, forming a chronic arthritis with the intra and extra capsular factors developing simultaneously in the articular region.

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-Dwight S. James

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.
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 students 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 presence 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.

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 Vertebrate enjoys. 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...
THE LOG BOOK

WITH THE COMING OF THE NEW SUMMER SEMESTER, ALL OF THE FELLOWS HAVE RETURNED WITH THE OPPORTUNITY. THE VACANCY WAS FILLED BY BROTHER DUG Frantz.

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 journey be happy and educational.

Congratulations to Pledge Master Brother Doug Frantz.

Keep 'em flying!!

F. J. N.

SIGMA SIGMA PHI

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 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 time being.

The following are our elected officials:

Vice president, De Lauriers; secretary, Westfall; corresponding secretary, Hatchett; treasurer, Chenoweth; sergeant-at-arms, Gaudet.

Sigma Sigma Phi is planning a number of entertaining meetings for the coming summer months. A 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.

GREETINGS TO THEM AND MAY THEIR ALUMNI WILL BE ATTENDING THE A.O.A. CONVENTION IN CHICAGO.

The beginning of the College's fraternity at a summer session found the members of the 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 Clasuing, 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 boys and its godfather and active "plugger" for the last year, Brother Doug Frantz, is an osteopath of the old school, an "ten-fingered" school, and the reader of his book cannot fail to be impressed with his sincerity, Dr. Hilbreth emphasizes that our profession is fascinating; the case histories along with the methods used in treatment are illuminations of how osteopathy succeeds where other healing systems fail.

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 Mrs. Sam Kamruntz, 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 would be wrong! Major is now a Junior at Still College.

A. G. D.

ATLAS CLUB

At the last regular meeting of the 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 Clasuing, Crane, Crotty and Harris we all intend to beat the heat through the medium of picnics, swimming parties and informal summer dances.

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BOOK REVIEW

(Continued from Page 1)

and normal function; and that all human ills may be traced back to some structural pathology, gross or trivial. Having arrived at this conclusion Dr. Still proceeded to search out the basic causes of the various ills and devise some means to correct them. He found many, and devised many wonderful corrective measures; much aid was added by the osteopathic profession continually, and it was Dr. Still's firm belief that 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 or 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 piquant in its graphic description of the human body, Dr. Hilbreth describes the working of the Old Doctor's mind towards his goal and the trials through whose fires Dr. Still is forced to pass in order to emerge as a great man and a wonderful system of healing. We know that the Old Doctor and his supreme faith in osteopathy give the book a warmth 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 illuminations of how osteopathy succeeds where other healing systems fail. His book is an osteopath of the old school, the "ten-fingered" school, and the reader of his book cannot fail to be impressed with his sincerity, Dr. Hilbreth emphasizes that our profession is fascinating; the case histories along with the methods used in treatment are illuminations of how osteopathy succeeds where other healing systems fail.

Throughout the book Dr. Hilbreth 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 strength made by osteopathy since it was formally introduced in 1874 when Dr. Still opened the first class of the first school for the teaching of the profession. This was the "American School of Osteopathy" at Kirksville, Missouri. It is now the "Kirksville College of Osteopathy and Surgery." The survival of osteopathy and its phenomenal growth is its present popularity with people who have experienced its benefits and the nation's recognition by state laws that it enjoys prove that it is not only the fittest survive but they are the only ones that need to make any compromise with other healing systems.
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 editor for articles on osteopathy. He has given up being an editor now to go into business on his own—a story for Horatio Alger, Jr. We all hope he will succeeding in his private matters.

The Log Book will inspire confidence in its readers posted on the where address which are available.

THE LOG BOOK
rThe o TB as disciples of his profession. In his book j^Q/lno small measure we owe our... New York, N. Y.
Gordon Elliott
349 Quebec Avenue
Toronto, Ontario, Canada.
Still Students with the Armed Forces

BOOK REVIEW
(Continued from Page 2)
friendship," to quote Dr. Hildreth. The man who has made his way has been made despite their earnest and bitter opposition. Dr. Hildreth tells that this has been a benefit to the students here in school, with practicing physicians free of charge and by of existing Basic Science Tests, 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 osteopathic profession the greatest contribution to the efforts of this pioneer who was a member of Dr. Still’s first class, who served on the Advisory Board for several terms, the president of the A.O.A., and who helped establish the Still-Hildreth Osteopathic Sanatorium, where he practiced so long. He was a loyal and loving friend to Dr. Still and his sons. A prodigy like Dr. Hildreth and of a progenitor like Dr. Still is surely... 

R. S. Raub

Pursuit for a Reason
(Continued from Page 1)
riage, developing in the interval between each of the movable bodies. It consists of varying amounts of yellow elastic, and white fibrous tissue and of a thick, mucoid, gelatinous substance. The disc is formed by three structures:

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. The 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. Blood vessels which later develop 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 should not participate in war or activities, acting within their power and for reasons they considered good, have seen fit to call some of our students away by the early post-birth years.

Any information you can give concerning how they have joined one branch or another of the armed forces will be greatly appreciated and will be made to publish it. Here follows the addresses which are available:

No. 1/c/o Postmaster, New York, N. Y.

349 Quebec Avenue
Toronto, Ontario, Canada.


**THE LOG BOOK**

President Golden to Speak
Station WCLF, Chicago
Mary E. Golden, President of the Iowa Society of Osteopathic Physicians and Surgeons, and Arvilia McCall, Evanston, Illinois, President of the Osteopathic Women's National Association, spoke at radio station WCLF, Chicago, Saturday, July 11, at 3:15 p.m., on the subject “Feminine 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 of 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
On June 16, Dr. Gulden, Chairman of the Membership Committee, started this year’s membership campaign. His subchairmen have selected membership targets for the purpose of containing 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

---Dwight S. James, Sec.-Treas.

**Address Changes**

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**Pursuit for a Reason**

(Continued from Page 3)

force against the annulus that can only 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 a state of equilibrium. This position requires but little imagination to visualize the tremendous array of segmental, prevertebral and multifidus muscle action that would be necessary to hold the columns of the bodies against motion in all directions and to realign a segment after every voluntary action. The startling absence of prevertebral musculature is evidence of the efficiency of the normal disc. In instance in flexion there is a compression of the disc and nucleus ventrally and distraction of the annulus posteriorly. The pressure on the nucleus centrally pushes it back against the stretching fibers of the annulus. Both the nucleus and the disc revert to what is normal for that vertebra and the disc thickness rapidly returns to the sixty or seventy year old discs present in a spine thirty years old or younger. Beadle and associates have been concerned with this fact and with its etiology. Their pursuit for a reason would not have to extend beyond the Osteopathic Lesion one frequent factor potent enough to produce the disc changes in one or all of these three different ways. 1. Vasomotor disturbances to the artery to the body of the vertebra and its ramifications. 2. Intoxication of the lymphatic return by reduction of the essential motion factor. 3. Impairment of the trophic or nutritional change. These changes progress in a fairly characteristic way unless accelerated by trauma, infections, or nutritional disturbances. Here the appearance looks as follows.

First decade. The disc is pliable, the fibrous and cartilaginous layers are the same as the 20 year old. The nucleus is soft, the nucleus pulposus utilizes the bodies with regard to the disc. The disc is thin for the years presented at thirty or forty. The intervertebral motions are limited so that the ease by which the nucleus pulposus utilizes the bodies is no longer possible. The nucleus pulposus utilizes the bodies for the years old or younger. Beadle and associates have been concerned with this fact and with its etiology. Their pursuit for a reason would not have to extend beyond the Osteopathic Lesion one frequent factor potent enough to produce the disc changes in one or all of these three different ways. 1. Vasomotor disturbances to the artery to the body of the vertebra and its ramifications. 2. Intoxication of the lymphatic return by reduction of the essential motion factor. 3. Impairment of the trophic or nutritional change. These changes progress in a fairly characteristic way unless accelerated by trauma, infections, or nutritional disturbances. Here the appearance looks as follows.

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Still Students With the Armed Forces

Here are the addresses of some 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 Monthian Field Tuscon, Arizona.
Patrick Lombardi, P.H.M. 3-C. U. S. Naval Hospital (Medical Storeroom) San Diego, Calif.

Pursuit for a Reason

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

Muscle pathy 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)

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 Hef- len, George Lewis, Herb Clausing, Frank Nasso and Bob Tonkins. Ed Mossman couldn’t make it but he sent his better half, Mrs. Mossman, to help 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.
**FRATERNITY NOTES**

Gamma chapter of Psi Sigma Alpha has had one excellent banquet, taken in several fine new members and a most interesting meeting. The banquet was held at 1:30 p. m. promptly, and lasted the whole day. The main discussion was 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 first banquet was held Tuesday evening at the exclusive Cliff Dwellers Club overlooking downtown Des Moines. We had present Brothers McFarland Tilly, new A.O.A. President; Chester D. Swope, Washington representative, and two 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 the form of a picnic, on July 22. The freshmen all attended with the exception of Jim Allender, who was over elsewhere. Those who spoke were Drs. Cash and Sorenson, Hatchett, pledge master, spoke to the freshmen and expressed the views and aims of the fraternity. We were proud to have been the hosts to these new men and trust that they have been completely "roughed" 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 house. Those receiving their Initiation certificates are 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: Willard R. Rasmussen and C. P. Christianson. Congratulations, boys! And may your choice have been the wisest.

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

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

Keep 'em Flying!!

--- F. J. N.

--- A.O.I.

On Sunday, August 9th, the Lambda chapter of Lambda Omicron Gamma held its pledge dinner at the Kirkwood Hotel in honor of the pledges William Stern and Robert Tonkins. This formally introduces our small but active group to five members, the two actives Dr. Abramsohn and Dr. Radetzky.

Plans are being made to hold study sessions in a seminar fashion, which both brothers 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.

**THE LOG BOOK**

**Gamma chapter of Psi Sigma Alpha**

Alpha has had one excellent banquet, taken in several fine new members and considerable study. As helping the College you 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 last 13th 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 Margaret Torretto and the fine kitchen technique of Ray Sweeney, everyone had all he could eat. There was no reason to try to eat more than they should. Just to prove his culinary art was not just beginning, and to keep the men happy, Sweeney was to have the next "mob" at our fraternity picnic July 31. We're convinced now Sweeney, just 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 a fair share. To that end the treasure 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 on the front line. The Chinese say, "one picture is worth ten thousand words"—the Phi Sig say, "one demonstration by Dr. Owen can save many thousand words and pages and an equal number ofthanks.

Our congratulations to Brother O. G. Nelson 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 the test in paying the 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.

--- A.O.I.

**New Location**

One of our alumni, Dr. E. L. Laundeen, 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

Pursuit for a Reason

(Continued from Page 1)

The Log Book is happy to hear (Continued on Page 4)

Bacteriology and Medicine

(Continued from Page 1)

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. It is more extensible—the same edema, and shifting of the position of the nuclei of the cells. The edema is clearly defined as in control muscles.

Microscopically the muscle tissue in the area of lesion effect of acidosis is evidenced by the frequent presence of round cell infiltration, both red and white bloods being found in the area. The fibers of the muscle bundles and fibers and also in the muscle fibers themselves. There is eccentricity, loss of the striation of the muscle, and also in the muscle fibers. The fiber margins are not so clearly defined as in control muscles.

Many of the arteries, arterioles and veins show an intimal thickening, with an increase in proliferation in their walls. In a few this evidence of inflammation in the vessels is so marked that the intima is still but, if not completely, obliterated. In long standing myosit is a few vessels art 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 pH of the muscle is around 7.4. With insufficient relaxation phase these acid metabolites are impaired in their removal and their neutralization. The ion concentration is demonstrable by dyes, staining reactions, H ion measuring equipment and by the known effect of acid on autonomic centers.

Dyes such as acid fuchsin will dye acid tissue and not normal muscle. 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 due to the acidosis of the muscle. With a potentiometer and galvanometer it is possible to delimit the limits of the H ion concentration. Muscle tissue is less alkaline than most other body tissues and a pH of 6.0 or less is not uncommon. When such lesioned muscle is encountered following extreme muscle exercise and mild inflammatory reactions. A pH of 6.8 or less is present in extremely severe myositis such as is present in any acute lesion, showing a pH change as great as 3 of an H ion unit. This is a pH change that is greater than appears in any other body tissue. The known effect of acidosis on tissue reaction upon tissue reveals the effects of acidosis in the lesion area. When acidosis is engendered in a more acid medium it becomes hydropic, absorbing and holding fluid. An intra and extravascular area on the surface of the area, the edema has considerable effect locally upon all the tissue in the spinal area, including of particular importance muscular, subcutaneous, connective tissue, veins and lymphatics, the synovial membrane and the lateral joint ganglion. All these are exposed, by continuity and contiguity, to the deleterious effects of both the local acidosis and edema.

—Byron E. Laycock.
(Continued Next Issue)

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 great disadvantage many individuals or organization suffer from, because of having had the experience, and charged each and every one 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.

Marriages

The Log Book is happy to hear of the marriage of Lorrain 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-}

(Continued from Page 1)
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 annual meeting in Chicago.

Dr. Hannan Re-elected
Dr. D. E. Hannan, Chairman of the Dept. of Public Affairs of the 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 Section 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 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, appointed chairman of the Regional Advisory Council of the Seventh Corps Area of the A.O.A. by Board Member C. L. Tilley.

Board of Examiners
Dr. H. B. Willard has been re-appointed a member of the Iowa Osteopathic Board of 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. Jamison, 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, thickheaded vaccine for active immunization against Rocky Mountain Spotted Fever is available from the 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.

Bacteriology and Medicine (Continued from Page 3)

...them and with their ability to meet successfully new biological situations. Among the species here have been met with them, are the human; and the fact is that this being written is evidence in itself that in their contentment, has been equipped with adequate implementations 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, acts as a specific protective factor. If the method used is not understood, but the result is that the protein contains essential antigens as a result of attack. This is the phenomenon of tissue immunity; it is an arrangement of the body's inter- action of its 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. Toxic-producing bacteria may elicit the presence of specific antibodies by leukocytes or reticulo-endothelial cells; agglutinins may render bacterial infection dormant, sometimes by causing them to clump or aggregate; precipitins cause the precipitation of the disease, sometimes following agglutination, and sometimes independently, plasmatic destruction of bacteria occurring in the form of antibodies may be retained in the blood stream, so that they are available to resist entrance and establishment of the disease at some future time. Temporary, acquired protection or immunity, is not difficult to understand on the basis of retention of antibody, although it is difficult to explain on the basis of immunity, however, it seems that heredity must play a part—actual immunological inheritance. In this instance the structural similar- ity of cellular progency must be of a molecular order; it would presumably have come from the earliest ancestors of the species, groups of organisms may be many which are harmless. Hence, one must be obtained in pure culture and organisms should not continue to be observed to produce the disease in a second animal, from which pure culture may be made. When such conditions have been fulfilled (Koch's postulates) the causative agent is isolated.

...mechanisms, which are logical that we should find the morphological and physiological qualities which have been documented through the history of protoplasm to maintain it as a living entity. With these cellular defense mechanisms, we may presume, are most efficient in a cell whose metabolism is maintained at an optimal level. In human cardiovascular 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 hormonal supply very largely. It will then be obvious that adequate functioning capacity of the entire blood reserve is intimately associated with normal bony relationships in the vertebrate. In active, exercising individuals such as our ancestors might have been, abnormalities in these relationships probably have a serious effect in sedentary or only moderately active individuals, taking advantage of the non-biological deviation in the body. It becomes significant when possible the animal requires inherent in the problem may be revealed. It is then feasible that osteopathic manipulation may be prophylactic as well as curative, in that the body cells may be better able to perform their functions with maximum efficiency. 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. This is the principle of "natural health" in principle is extremely ancient; man's recognition of the possibilities for applying the principles is 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 their activity recognized, a recurrent infectious disease man has persistently attempted to exclude bacteria as causative agents. To this end much has been done and the following lines: (1) Identification of bacteria, and recognition of those which are patho- genic, for no progress can be made against them until they have been isolated, classified and understood; (2) Diagnosis, by direct examination, of serological reactions of pathological behavior, such as cultural characteristics; (3) Detection of individ- uals susceptible to disease; and (4) Specific prophylaxis and therapy.

Identification of the pathogen is considerably more than merely assuming that the organisms from a site of infection, included with the one recovered from the body, will be observed to produce the disease in a second animal, from which pure culture may be made. When such conditions have been fulfilled (Koch's postulates) the causative agent is isolated.

...mechanisms; these requisites cannot be fulfilled in all instances, unless another human being is used as the subject (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 was present following an infectious infection, it became possible to use this type of reaction in the study of human biological response on the part of the host in the presence of the bacterium in many instances the cause of the disease. Examples of such behavior are the Dick 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 resistance factors to an antigen substance.
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 the physiology of muscle tissue is manifest in the muscle of the myositis. It 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 muscles to normally aid other tissues such as the vessels, nerves and the joint in doing their work.

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 nervous 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 that relaxing muscle from 2 to 6 and occasionally 20 per second. Areas of myositis reveal sometimes as frequently as 20 per second passing through the area. 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 extracellular; (3) it is similar in constitution to lymph (which is also extracellular) differing 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 unable 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 these must reach the capillaries before they can be absorbed. This acquires some significance, for example, in the movement of proteins and bacteria through the nasopharyngeal membrane. Horse serum has
On August 10th with our new pledges: L. L. Gaudet, Dr. M. B. Landis, and W. T. More, received their initiation in the form of a dinner at the National Bank Bldg., Clarksburg, W. Va., honoring them as new members of the fraternity of Phi Sigma Alpha.

The last two meetings of Phi Sigma Alpha have indicated a definite note of progress in the organization.

On August 24th at the Atlas Club the fraternity initiated Charles Schultz and then heard an excellent address by P. Schwartz, president of the college, with an Honorific Membership. The fraternity was further honored by two representatives of Drake University chapter of Phi Beta Kappa, Mrs. Kenneth Shawhan and Mr. Frank Geeman. Dr. Owen, Dr. Graney, Dr. Schwartz and Mrs. Shawhan each spoke briefly on the value of greater scholarly effort in all schools, particularly under present world conditions.

A breathing spell again to prepare for the end of the semester’s activities.

Sarah Jean Gibson was entertained by the sorority at a "rushing" dinner held at the home of Dr. Cash, followed with a show downtown.

The sorority is making plans to donate something to the new student lounge—a fact which 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 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 of those who are well hold you—your future is assured.

Since the Phi Sigma last made their monthly report to the Log Book, the Chapter house has taken on a new and more cheerful atmosphere. Our new color paper has given it all the rooms a touch of color. It is a long look-forward-to event and all the members are tremendously pleased with the new look.

On Sunday, September 6th, Brother Herb Clauzing and the former Miss Betty Annas were married in the bride’s home in Jewell, Iowa. The Chapter extends 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 also shown the active chapter several good reasons 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 week’s meeting 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 everyone feels more like going places and the work nights have always proved a fine extra-curricular activity—enough so to be continued for some time into the future.

Between pressure from Dan O’Neill and Adolphus Hitter, the Atlas Club recently decided 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 an extent marred of the old “confirmed’’ have slipped too the Atlas House, as have other fraternity houses, for itself with the fewest occupants in many years. Because the house thus served a relative few except for the several “full sessions” and frat parties, the trustees and members of the corporation took advantage of the situation and bought two workers, nursing homes, etc., for more living quarters, and sold the house on the market to a Mr. Mrs. White. Thus, rather than being a burden to the good brothers who have succumbed to the great marriage market, the property, above any stocks or debts, will stand as a potential investment for 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 well.” The program served to entertain the several alumni and wives. Dancing, refreshments, and a brief program served to entertain the guests.

The following men have been pledged to Atlas since the smoke-in: Charles Schwartz, Yugas, freshman; Charles Schwal, freshman; Floyd Tollen, freshman; and Charles Geeman, 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.

A. A. C.

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 pressure examinations. Applications for any registration or reciprocity to be considered at this meeting must be filed with the Secretary not later than the close of the meeting.

Application blanks may be secured by writing the Secretary, Guy E. Morris, D. O., 542 Empire National Bank Bldg., Clarksburg, West Virginia.
**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 Kirkville, Missouri on October 12, 1892. This year, 1942, marks the GOLDEN ANNIVERSARY of the school. 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 selfless 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, WAR INJURIES AND DISEASE, emphasizing information every physician needs to have at his finger-tips now.

The Polk County Women's 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.

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**Intervertebral Foramen**

The requirements for space necessitating the cutting of the previous paper continues. 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 osa, its anatomy and the structures within it reveals that we have neglected one of the most important factors in many lesion, and its involvement is undoubtedly also an important maintaining factor in lesion pathology.

The Duct Ossa is a tube-like structure that is superiorly and inferiorly by the vertebral pedicles, posteriorly by the intervertebral disc, and a portion of the rib above by the intervertebral foramen. The duct oosa is dorso-lateral in position, at the external end of the intervertebral foramina, and the duct oosa is mostly fibrous tissue and is continuous with the surrounding ligaments.

The purpose of the duct oosa is to prevent the passage of fluid to and from the intervertebral foramina. The duct oosa is the only opening for the passage of fluid into the subarachnoid space from the spinal canal, and it is also the pathway for the passage of fluid from the subarachnoid space to the spinal canal. The duct oosa is also the pathway for the passage of fluid from the subarachnoid space to the posterior cranial fossa, and it is also the pathway for the passage of fluid from the subarachnoid space to the anterior cranial fossa.

The duct oosa is surrounded by the dura mater and the arachnoid mater, and it is also surrounded by the pia mater. The duct oosa is also surrounded by the subarachnoid space, and it is also surrounded by the subdural space.

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**FULL DISTRICT MEETINGS**

**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.**

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**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. Many reservations are being taken on the occasion and Tuesday, May 17 and 18, The House of Delegates will convene on Saturday, May 16, 1942, at the suggestion of the Committee for that purpose have been completed, according to Chairman Paul.

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**OSTEOPATHIC HOSPITAL ASSOCIATION**

Under the leadership of L. W. Johnson, Chairman of the Hospitals Committee of the Society, a meeting of representatives of all osteopathic hospitals in the State was called and held at Alcona on Sunday, September 12, and the Iowa Osteopathic Hospital Association was organized, as a unit of the Iowa Society of Osteopathic Physicians and Surgeons.

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**PUBLIC EDUCATION**

Harold D. Meyer, Chairman of the Public Education Committee, in co-operation with J. R. Forbes, Chairman of the Anniversary Celebration of Osteopathic Education, is now mailing to some four hundred legislators, candidates for office, nurses, doctors, ministers, and judges, the formal announcement of the Fiftieth Anniversary Celebration of Osteopathy, containing a brief educational presentation on ‘Osteopathy Today.’

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**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 osteopathic physicians of the State who were members of the Iowa board of examiners were present. Many important matters were considered and determined.

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**MEMBERSHIP TO THOSE IN WARTIME**

All osteopathic physicians of the State who were members of the Iowa Society during the last fiscal year and are now in, or may subsequently become, 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.

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**QUESTIONNAIRE**

Pursuant to the 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 these questionnaires will be appreciated. The office of the Secretary is urged by the Board of Trustees.

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**THE IOWA OSTEOPATH**

The Society will bring publication of its own official newspaper, the “Iowa Osteopath,” within the next sixty days, according to President Golden. The applications for membership are essential and the time for the reorganization of the business office of the Secretary is urged by the Board of Trustees.

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**APPLICATIONS FOR MEMBERSHIP**

C. R. Barry, Alexander.
Anna E. Gelander, Manilla.
S. E. Swift, Monticello.
R. C. Rogers, Grinnell.
M. B. Landis, Des Moines.
C. W. Peterson, Fort Dodge.
Dwight S. James, Sec.-Treas.

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**Lymphatics**

(Continued From Page 2)

**Lymph Flow**

In a lymphatic limb a very slight movement of lymph may occur; however, the lymphatic vessels are essentially lymphatic vessels involved in other bodily activities for the propulsion of lymphatic fluid. Several factors influence the flow or movement of lymph in varying degrees. These include: (1) Pulsion of lymphatic vessels, (2) massage, (3) passive motion, (4) muscular activity, (5) Cardiac activity, (6) intestinal peristalsis, (7) increased venous, but not increased arterial pressure, (8) postural, muscular massage or passive motion, (9) oxygen decrease to 75% of the normal blood content, and (10) carbon dioxide increase in 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 rate of lymph flow 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, which in turn, is related to the various 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. (6) The thoracic as well as abdominal vascular pressure. The lymph in dogs has been found to average approximately 11 mm. Hg, and has increased, if not doubled (twice 26 mm.) under conditions of forced breathing. Beck, also experimenting in this field, concluded that the thoracic pressure was influenced readily by pressures applied from without the lymphatic system, and consequently upon the abdomen or marked change in the intrathoracic pressure. The entrance of lymph into the thoracic duct is further facilitated by a gradient of pressure between the thoracic duct and the recipient vein. Roentgen and Valette found thoracic duct pressure to be 5 mm. Hg, and that of the internal jugular to be approximately 2 mm.

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**Lymphoid Tissue**

In the cold blooded vertebrates lymphoid tissue is absent. It begins to appear in birds, and in higher forms of animals, which have exploited the possibility of this tissue to the greatest extent, is general and wide distribution in the human body. The functions which the tissue serves in the healthy body are not clearly understood, nor is it clear whether the completeness of lymphatic tissue throughout the body acts as a single organ. The virtual impossibility of total extirpation of lymphoid tissue and conflicting results observed after partial extirpation indicate that the tissue will not be attacked 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) Defense against invading bacteria and transport of protein and fat; (3) vitamin storage; (4) elaboration of the hormone of the reticulo-endothelial portion of the lymph node. Vitamin storage is open to some question. It has been observed that lymphopenin is increased in patients with hypoalbuminemia and hypovitaminosis B, though the latter finding is not significant because it was observed before the patient was empirically complex was isolated. Vitamin D has been said to exert an independent infection to the body, and at length proves insufficient, and may, perhaps, in a later period itself becomes a new source of independent infection to the body. The function of the reticulo-endothelial portion of the lymph node is to protect the organism from the poisons of the body as well as from the disease of bacteria that 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 modern biology to include the lymph nodes as sites of antibody formation. That the extension is particularly justifiable is without question; that the group of glands next to the war effort. Applications for Membership

C. R. Barry, Alexander.
Anna E. Gelander, Manilla.
S. E. Swift, Monticello.
R. C. Rogers, Grinnell.
M. B. Landis, Des Moines.
C. W. Peterson, Fort Dodge.
Dwight S. James, Sec.-Treas.

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**LYMPHATICS**

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C. R. Barry, Alexander.
Anna E. Gelander, Manilla.
S. E. Swift, Monticello.
R. C. Rogers, Grinnell.
M. B. Landis, Des Moines.
C. W. Peterson, Fort Dodge.
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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 in separable 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 neurons 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 of the granular cells of the medulla were also found, especially in the cardiac and respiratory nuclei. The ependymal, 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 expansion 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 punctures 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 lumber 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)
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. Harry Hash was elected head (Noble Scum) of the pledge class. Many hamburgers and hot dogs were consumed, and plans were made to tackle the problems confronting osteopathy in connection with the war.

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 20. Alumni Dr. Harry Marshall was the toastmaster and Dr. Fred Campbell gave the address which was an excellent presentation of the problems confronting osteopathy in connection with the war. The Atlas chapter congratulates Ronnie and extends its best wishes for his success. Brother Woods has served as cap for our noble Skull this semester and it’s always been a credit to our organization.

The officers for the next semester are:

Noble Skull: Jack Price
Occipital: Joseph Cullen
Fylyrus: Robert Patton
Styliol: Carl Nagy
Sacrum: Scott Heatherington
Receptaculum: Vernon Stoner
Polyzatan: Paul Senk.

—G. A. D.

ΔΣΘ

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 register to become alumni. These men are: R. Bennington; C. DeLauries; and J. Hally.

The merge, as was the largest and finest in the chapter’s history by the consensus of opinion, was among those present were: Dr. Nash, Stowe, Englund; their wives, and Drs. Golden and Sorenson.

Our guests for the evening were the Delta Omega Sorority, ladies, and lady guests of the brothers.

Our president, Frank Nasso, had the unusual distinction of having his birthday on the 9th, and to make it still more special, his wife was expecting the arrival of their first child.

The evening was highlighted by musical renditions and climaxed by our Beta President, Terrence Englund, his wife, and lady guests of the brothers.

—Fraternally,

H. G. H.

ΦΣΣΑ

With the termination of the summer semester, Gamma chapter of Phi 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 direction: Hal Beals, President; Carl Waterbury, Vice President; Jim Booth, Secretary; Dick Bocock, Treasurer; Gerry Dierdorf, Corresponding Secretary; Charles Schultz, Reporter.

The final Sunday in the fall semester, Oct. 7, at Youngker’s Cremona Room, the chapter bade farewell and gave thanks to its members about to enter the profession. Kenny considers the flaccid paralysis as mostly, if not entirely, secondary, developing as a result of some other primary cause. These conditions are characterized by firmness, tenderness, prominence, and pain when the muscles are in a spastic state, then the point that the spastic muscles contract in the acute stage of the disease.

The main symptoms are spasms and cramps, which contract in the acute stage of the disease. Therefore the need of this fund is very great. Kenny considers the flaccid paralysis as mostly, if not entirely, secondary, developing as a result of some other primary cause. These conditions are characterized by firmness, tenderness, prominence, and pain when the muscles are in a spastic state, then the point that the spastic muscles contract in the acute stage of the disease.

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—J. W. S.

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 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. 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 program and establish a hospital clinic.

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Kenny Method

(Continued from Page 1)

Before discussing her method of practice, she had a little time on the symptoms and pathology for it will make it less difficult to understand this new method of practice.

According to Miss Kenny, the main symptoms are spasms and shortening of the affected muscles, coordination is frequently displaced, 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 their disuse and because the muscles in the higher and lower centers.

In the above group of symptoms there are three outstanding signs which distinguish for 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, she 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.

Mrs. Baugh now seems to develop a problem first, the flaccid paralysis is secondary, developing as a result of the spastic paralysis. The muscles on the posterior surface of the leg are in a spastic state, then the muscles on the anterior surface will show the flaccid paralysis.

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The Log Book
The Official Publication of Des Moines Still College of Osteopathy

The cerebral and spinal concussion

(Continued From Page 1)

Cerebral and Spinal Concussion

A lethargic state may exist for a time, and it is only after a period of time if any interest is taken in events happening around him. He may, however, obey simple commands with a delayed action; his 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 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 may be described as an intense, severe ache in the back of the neck and in the region of the occiput. After the severe headache leaves, a dull uncomfortable feeling of the head and with varying intensities of cranial discomforts return with the slightest degree of excitement or activity or exertion which one may undertake, even in a conservative way. Concentration and sustained attention are impossible, and 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 can produce a feeling of fatigue which 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 arcal compression, may have additional concussion injuries caused by flying debris and 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 arcal 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 muscles.

Some cases have been examined where men were suffering from spinal concussion while still in the trenches and within a few minutes later being observed. The following symptoms were noted: the cutaneous reflexes were absent, the knee jerks, absent, which was essential. The tendon reflexes were exaggerated and extreme hypotonus of all muscles was present. In slight cases the hypotonia 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 faciidity 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 central nervous system, the patient has developed a slight spasticity with an absence of the knee and ankle jerks. Occasionally the extensor reflexes persist, with slight spasticity of the leg muscles and an increased knee jerk.

Anesthesia or analgesia, partial or complete, over varying areas may be found. The milder cases affect the feet or legs only. The more severe cases may involve any area of the body or be displaced by increasing spasticity with extension plantar reflexes, ankle clonus and increased knee jerks; most cases show a spasticity of the stupor are evident, limited activity may be granted, such as bath privileges. When the patient has been long in bed, he 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 accompanied with no unfavorable symptoms and the patient shows no sign of convalescence, a more active 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 exacerbation of pain over the cervical and spinal area.

In the stupor following complete concussion injuries caused by flying debris and 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 arcal compression.

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 injury so frequently found in civilian practice could have been prevented by sufficient rest in bed after the injury. The same is true after shock and after spinal injuries from burial. Many men who received all kinds of treatment in going from one hospital to the other, particularly no benefit could have been cured with rest immediately after the injury.

One must hear in mind that if a patient is kept in bed for too long a period of time, he may lose his powers and create the impression that he is seriously injured and develop a hysterical exacerbation of some degree or a paralysis. When the patient is able to walk and complain 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 accompanied with no unfavorable symptoms and the patient shows no sign of convalescence, a more active exercise should be started.

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Smallpox-Diphtheria Campaign
D. E. Hannan, Chairman of the Department on Public Affairs, recently assumed the position of Department's smallpox and diphtheria immunization program and approval, granted by Walter L. Biering, 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 conducting each meeting on the subject “State Affairs,” and Dr. Huls is lecturing on “Osteopathic Technique.”

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: A. G. G. Eubanks, president; Jackson P. Gage, treasurer; 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, has cancelled its fall meeting after 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 other meetings. Consideration also has been given to the call that would be made on the time and work of physicians involved.

Radio Committee
Paul E. Kimbery, Chairman of the Radio Committee, announces the resume of 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 Approved Osteopathic Colleges and Hospitals Affiliated for Teaching and Practice in Osteopathy, legislation candidates, other state officials and judges in Iowa.

American College of Osteopathic Surgeons
J. P. Schwartz, President of Des Moines Still College of Osteopathy, held its annual clinical assembly of the American College of Osteopathic Surgeons, October 10 to 15, in Kansas City, Missouri. Dr. Byron Cash, professor of orthopedics at Still College also was on the assembly program.

With District Picnic
Osteopathic physicians and their families from the Fifth District enjoyed the hospital picnic in the park home on Spirit Lake, Sunday, September 29, 1942. Mrs. B. W. Jones at a picnic dinner and program at their summer home on Spirit Lake, Sunday. Mrs. W. Jones, director of the clinic, made up of baked Walleye Pike and all the trimmings were enjoyed by the guests at tables set up on the lakeshore.

Civilian Defense
G. A. Whetstone, trustee, has been appointed chairman of the 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, Con-way, Iowa, Camp No. 3522.

Osteopathic Hospital Association

Lonnie L. Facto
(To be continued.)
WAR GAS POISONING

John B. Shumaker

The use of poison gas in warfare is not new. It 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 flames were blown back into the faces of the besiegers. The attack failed. The British advocated the use of poison gas as early as 1913 but did not use it because it was against the principles of civilized warfare. In the first World War the Germans employed 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 enemy. Various 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 their 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 to 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 comprehend the weather condition which are best suited for gas attack and be prepared. Beware of cool, calm, cloudy weather.

The Kenny Method of Treatment for Infantile Paralysis

(Continued)

Incoordination, according to Miss Kenny, is the second of the major symptoms of infantile paralysis. It 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 antagonist.
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 leading 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 conduc tion 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 are disturbance, 2. Vaso-motor disturbance, 3. Intoxication by accumulation of 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 it seems necessary, before going into the anatomy and physiology of the vegetative nervous system and the 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 type.

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, sensory, 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 inflammation of 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 areas of function. Therefore, one of the problems of the next few papers will be to make it easier to recognize 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 neurotoxins to neuritis, and

(Continued on Page 4)
Looking back over the interval between the last time Delta chapter of Phi Sigma Gamma reported, we can... of Phi Sigma Gamma reported, we can... fifteen minutes when the spasm is unusually acute or threatens the life of the patient, (Continued on Page 3)

I

the present time she is carrying time received her welcome into Adams, much better known to all with royal spareribs for a feast, and our new pledge for company. to all the new freshmen.

interesting semester's work ahead. followed there should be a very in- ternity meeting held Tuesday, October 27, at the Phi Sigma Psi Sigma Alpha honorary fra-

Business was the theme of the Phi Sigma as a pledge, and at the present time she is carrying out certain duties of which the students who frequent the stu-
dents in charge are well aware. We continue on this banquet theme — we want to wish our senior member, and to all seniors the back wish with which they leave us for further work in the field of Osteopathy. We know they will carry our torch high and prove that our school has a place in therapeutic values second to none. To Doctor Owen and his wife, who made our banquet that evening more en-
joyable by furnishing records and a player we want to extend our thanks. You should have fun the way we had — and the expres-
sions on those faces!

Before it is forgotten we'll like to report that this year our small numbers we do have of-

icers and they were installed at the same time of the Pledge and Senior Banquet. The honorable president is Mary Williams, the vice-president and recording secretary-treasurer is our vivi-
cious Mary Toriello, and the cor-

responding secretary, escort and one who gives you these reports nice Mary Owen. We will keep the sorority busy and useful as long as we are, and though our number seem to con-

tinually 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 of our time to go begin our pledge to the mysteries of the organization with she has become associated. We hope that soon our pledge initiation will be worked out and you may hear more of this in the next edition of the Log Book.

—M. K. corr. sec.

Kenny Method
(Continued From Page 1)

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—M. K. corr. sec.
The Log Book
Strictly Plutonic

Trichloroethylene, chloroform, benzaldehyde, formaldehyde, carbon tetrachloride.

Opinions on such aggregates arise from deep research. It is well to remember that the critical temperature often the shrubbery, walls, and ground. 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. (To Be Continued)

War Gas Poisoning (Continued from Page 1)

Persistent Gases

These gases are most dangerous. Their rates of evaporation are slow, and they tend to remain in the area for many hours contaminating the air. They may be found in the form of accumulation, often the shrubbery, walls, and ground. These gases are: mustard, lewisite, chloropicrin, and bromenzylicyanide.

Classification

The substances used in gas warfare may be grouped under several headings in descending order of toxicity.

I. Viscousants— including mustard, lewisite, ethylene oxide, and phosphorus

II. Asphyxiants (lung irritants)

The substances used in gas warfare are classified into five groups: persistent gases, asphyxiants, irritants, incendiaries, and bacteriological agents. Persistent gases are those which remain in the area for a long time and are difficult to detect. Asphyxiants are gases that cause asphyxiation by depriving the body of oxygen. Irritants are gases that cause inflammation and irritation of the respiratory tract. Incendiaries are gases that cause flammable fires. Bacteriological agents are gases that cause disease and death by infecting the body with bacteria.

I. Persistent Gases

These gases are those that remain in the air for a long time and are difficult to detect. They include:

- Mustard gas
- Lewisite
- Chloropicrin
- Bromenzylicyanide
- Ethylene oxide

II. Asphyxiants

These gases are those that cause asphyxiation by depriving the body of oxygen. They include:

- Phosgene
- Chloropicrin
- Lewisite
- Ethylene oxide
- Phosgene

III. Incendiaries

These gases are those that cause fires and burns. They include:

- Phosgene
- Chloropicrin
- Lewisite
- Ethylene oxide
- Phosgene

IV. Sternotans

These gases are those that cause inflammation and irritation of the respiratory tract. They include:

- Phosgene
- Chloropicrin
- Lewisite
- Ethylene oxide
- Phosgene

V. and VI. Smokes and Incendiaries

These gases are those that cause inflammation and irritation of the respiratory tract. They include:

- Phosgene
- Chloropicrin
- Lewisite
- Ethylene oxide
- Phosgene

VI. Incendiaries— white phosphorus, thermite, arsenic.

Symptoms and Treatment

In the event of exposure to mustard gas, the victim must be protected by a gas mask properly adjusted to prevent further inhalation of the gas. The masks must be changed every 2 hours. They are similar to those of mustard, and are treated accordingly. Treatments must 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 nose becomes sore and sometimes ulceration and hemorrhage occur. A nasal douche with 5% sodium bicarbonate and tincture benzoin irrigation 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 gastric 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. In severe cases, Lewisite may cause abdominal symptoms, and if any of the gas has been swallowed, it may be treated with copper sulfate packs, which are removed, and treatment for burns is followed.

Gas masks afford adequate protection against these gases. The recognition of a gas determines the treatment and saves a life.

Note—This paper is a resume of a lecture presented by Dr. W. Smokes, chief of the chemical warfare service, at the Technical Program of the Fifteenth 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 the meetings has been changed from February due to the change in dates of graduation at our schools owing to the war effort.

Application for either admission or reciprocity to be considered at this meeting must be filed with the secretary not later than the first day of April.

Application blanks may be secured by writing the Secretary, Guy E. Morris, D.O., 542 Empire 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 class and wound their leisurely way to Macon, Missouri, for the annual visit to the Still-Hildreth Sanitarium.

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 Sanitarium 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 himself and a brief sketch of the care of patients. (Believe it or not, we were all there listening to the lecture, Mr. Facto arrived—imagine his surprise!) Particular mention was made of "Woody" (Chief Wahoo) Hockaday, telling of his condition and many of his exploits. "Woody" then came in to lecture to the group. At unusual, his topic was world peace and he recounted to us his ideas for securing peace and tranquility. He told us all 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 riding the world of war.

Dr. Fred then introduced the staff of the hospital and announced the adjournment for dinner. We were served a most delicious chicken luncheon following which Dr. Fred extended the welcome from Still-Hildreth. Dr. Facto responded with our appreciation and called upon Ed Mosman (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 individual case 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 wangled 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 Still-Hildreth for making sure we all got out of the Sanitarium, although we work 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 damage 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 alteration of the support characteristics. This extent of involvement constitutes a neurosis.

The etiology of the changes that constitute a neurosis is as varied as the symptomatology. Ordinary or exceptional experience of human life is the ubiquitous etiology. Toxemias to drugs, ingested and absorbed substances, metabolic disease, acute or chronic infectious disease, injury, both internal and external, trauma, emotional disturbances, perverted metabolism or avitaminosis and doubtlessly etiological factors. Thus neurosis is a nutritional or toxoid disturbance to a nerve cell with resultant dysfunction of the nerve itself and of the tissue innervated.

Pathology

Pathology of nerve cells involved neurosis consists only of: a diminution in the number of Nissels granules slight abnormality in staining resistant; barely detectable irregularity and swelling of the cell. Even though these changes are by some considered pathological-evident evidence they are with increasing frequency being appreciated to be more than functional disturbances of cell body of the nerve cell. Evidence is established that there is persistent metabolic disturbance, nutritional, vascular, vasomotor, normalization 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:


Symptomatology

As has been mentioned any symptom, since all are the result of toxemia, reflexes or vascular motor disturbance, may be caused by this beginning phase, of neurosis of the nerve cells. The effect on the structure innervated may be: hypofunction; 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; bella, arsenic, all the vitamins, salicylates, lead water, potash, nux vomica, morphine, T.N.T., H.C, mercury, chloroform, ephedrine, adrenaline, lidoide, cocaine, acetylaldehyde, antipyrin, phenacetin, coffee oil, valerian, ergot,エステル, mustard, cannabis indica. Also the following treatments are used if no apparent reason other than the ineffectiveness of the above "standards" prescriptions": long wave diathermy, short wave, infra-red, ultra-violet, ichthyol, magnesia, diathermy, acupuncture, X-rays, ozone, to which the Chinese add shark-fin soup. Upon retrospect the last might be the best bet. The eradication of etiological factors, when possible, is a much more plausible reason than the ineffectiveness of the above "standard prescriptions": long wave diathermy, short wave, infra-red, ultra-violet, ichthyol, magnesia, vibration, glandular and supposedly glandular substances, metabolic disease, avitaminosis, nutritional deficiency, along with the etiological factors, are all doubtlessly etiological factors. Thus neurosis is a nutritional or toxoid disturbance to a nerve cell with resultant dysfunction of the nerve itself and of the tissue innervated.

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. Gorden 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 the last from the last. This class, I'm sure, is going to be one of the most liveliest in school.

Military News

Recently acquired addresses:
Private David Friedman
Infrmary
New Cumberland, Penna.

R. L. Nichols
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.
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 Kirkville, 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 continued to flourish as an important part of the Osteopathic system of education. Other Osteopathic colleges, though not so strongly endowed, played their part in the early development of Osteopathic education and were either dissolved or absorbed by the better established Osteopathic institutions.

With the extension of the Osteopathic curricular programs (Continued on Page 3)

Dr. Bachman Ill

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 heartstrings 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

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 at all. The existence of pain naturally concentrates our attention on the sensory aspect of nerve tissue and almost entirely upon cerebral spinal 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

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 Alshouse, Clausing, Mucwe and Eugene Stano. We welcome them into the pledgship of our fraternity and hope that they will prove to be a credit to our house and their road to osteopathic success.

Along with the Christmas season comes memories of our alumni Sigma "Tom and Jerry Christmas Party". We have decided to combine this with a record party, so it should prove to be a good way to end the school year before leaving our respective homes for the Christmas vacation.

The old chapter house has taken on a new aspect while our new house-mother has taken upon the upkeep of the house. Her fine cooperation in keeping the house clean and making a more home-like atmosphere in the chapter house is truly appreciated by all the members.

— H. E. H.

ATLANTIC CLUB

The Atlas Club continues to meet at the YMCA and is well started on a new phase of activity in both social and educational. We are having our regular Practical Reading Room, held in the Cremona room of Young's on November 24th. Those honored for sophomores and freshmen marks were: Jim Booth, Robert McFarland, and Lester Dierdorff. Those receiving highest marks were: Herb Harris, Don Young, and Lester Ruff.

The Atlas Club sends its best Christmas and New Year's wishes to all of its alumni and friends.

— L. R.

NEW TECHNIQUE OF MUSCLE RE-EDUCATION

As soon as joints can be moved passively through a small arc or into correct position with some limitation of movement, indication that spasm is lessening, muscle re-education within started with the patient still in bed. At first this consists largely of maintaining or developing a "mental awareness" of the muscle and its insertions. Later, as spasm decreases, the more active re-education can be added. In the presence of spastic action substitution or coordination, 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 initiated but such action is always under the guidance of the technician. For this later muscle re-education the patient is placed on a series of tables in such a manner as to be normal a position as possible. The patient is taught to attempt, the usual standing position with the feet at right angles and the knees straight. Then the patient must be relaxed and cooperative. Recession cannot be carried out in babies who are crying, or in children 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 quietly without using any muscles other than the ones to be treated. His attention must be concentrated solely on the motion to be performed before the technician then firmly grasps the part to be treated and without causing pain carries out the intended motion passively. Only when this is possible without pain does the technician instruct the patient to attempt the motion 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. Having achieved this state, voluntary motions on the part of the muscle whether paralyzed or "alienated," which is being trained, must be further developed. Least in all, the conscious mind must accept this "awareness" of the muscle if coordination or integration is to be obtained. If any visible or palpable motion is accomplished, the treatment is stopped immediately and 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 (Continued on Page 3)

Buy

War Savings Bonds
The Log Book
The Official Publication of Des Moines Still College of Osteopathy

Editor...........Lester Raub, B. S.
Advisory........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 osteopathic 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 applicability for loans is on the waiting list. Contributions are needed to meet the increasing number of requests for loans.

The Committee requests $1.00 for each sheet of 100 seals, but any contribution will be appreciated.

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. Nell 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.

Kenny Method

(Continued From Page 2)

patient to do so or by finger pressure against the muscle. Much care is observed to prevent injury to the skin. Of importance is the fact that Miss Kenny's technique always is designed to prevent damage to the muscle by proper location of pressure. The procedure is repeated daily or several times daily even while the patient is receiving hot fomentations. Miss Kenny considers this a very important factor, and the function of that muscle should eventually return if the muscle can be stimulated by this process. The technique is continued until 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 before any re-education procedure can occur to perform their primary action.

Group 3. Muscles with separate origin and common insertion and multiple action.

Group 4. Muscle groups with dual origin and single insertion and multiple action.

Group 5. Muscles that stabilize positions obtained by other movements.

The first two are the most important groups.

The biceps of the arm and the hamstring muscles of the lower extremity are 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 into the resting position by flexion of the knee. Only then can the pull be placed at the insertion of the patellar tendon and the procedure performed. 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 interpretation 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. Only one position is used, the supine, and all the anterior muscles are treated before the neck is turned over to allow the posterior ones to be attended.

Loisie L. Fato, D.O.
(Te Be Continued)
THE LOG BOOK

An Interesting Case

History
On August 6, 1942, Mr. W. A. G. came to our clinic for an examination. His occupation that of a traveling salesman. The patient came in complaining of a frontal headache that he was not able to relieve by any quick motion, such as sneezing, coughing, jerking of the head, or bending over. He had to use his fingers to palpate to relieve the pain. He said that there was some aching in the temple region 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 an X-ray examination and was fitted with a pair of glasses. The patient wore the glasses for six months but obtained 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 manipulative therapy. After a few treatments from one without any results he went to another but obtained no relief. Through contact with a student at 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 digestive 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 hemoglobin of 90%, red cells 4,450,000, white count 800, 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, and 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. If the patient was treated in the clinic every other day. After the third treatment the headaches were obtained and he was advised to come back to the clinic if the headaches returned. During the following weeks the interval between treatments was lengthened and the patient returned only when there was some pain or discomfort in the headache. 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. 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)

Neuralgia is classified both as a disease of irritation caused by toxic or traumatic neuritis, 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, disintegration, and granules, eccentricity of the nucleus, chromatolysis, slight edema, and degranulation, again demonstrating an increased H I ion concentration (i.e. a decrease in p H). These changes are mostly observed in the occipital area, occasionally red cells are found in and around nerve tissue in areas of neuralgia. The same degree of tissue disturbance and intovagination is present in the tissue innervated by the involved nerve or nerves.

Physiologic Perversion
The perversion of the physiology of the nerve tissue and further afferent area of distribution is 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 there is a normal degree of resistance. Impulses which normally would be screened out at the synapse because of normal resistance are reduced reflex response. Thus there is a greater efficient discharge ofafferent fibers and these increased impulses have an at proportionately increased effect on the motor or somatic fibers and thus possibily that their effect is disproportionately exaggerated. This hyperirritability of nerve tissue and the reduction to reflex are effent limbs with which the tissue would be normally unexposed to for two additional, toxic and vasomotor perversion present in neuralgia.

The tissue supplied show evidence of this hyperirritability. Vasomotor crises are precipitated with greater ease. Muscle tissue is maintained in a hyperirritable condition. Spasticity is present. The muscle tends to undergo contracture after contraction, will not relax, and would normally be insignificant trauma or with sudden stretching. The skin over such areas shows a hyperkeratosis and consequently pimples, boils and contact dermatitis develop with understandable frequency. The skin may be hyperirritant and the hair is usually coarse and dry.

The physiologic perversion is a natural invitation to pathologic change, a "focus minoris reperaturorum." 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 and muscle actions are greatly diminished. Weather changes, humidity, etc., constipation and any decrease in the regulation rate by the digestive excretory avenues intensifies the pain. Toxemia due to any cause magnifies the discomfort.

Treatment
Since all these changes are present in the lesion area neuralgic and manipulative treatment. The ordinary medical treatment description would mean the reviewing of all those used in neurosis or in addiction 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 tissue 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 professor, prevailed upon the department to show us a couple of motion pictures dealing with the war. Chief Petty officer Oliver, U.S.N., showed us 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. action. The second film was "Battle of Midway," showing the destruction wrought by the Japs at the island and the high price paid for such small success they had.

Friday, December 11
Dr. Landis, in charge of this department, invited us to a lecture on "Pathology of Pneumonia," and Dr. Facto talked about the "Pathology of Bronchectasis." 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 are happy and they have decided to keep her!

We have the pleasure of announcing another baby girl, born November 30, 1942. She is Barbara Diane, the daughter of Dr. and Mrs. C. W. Bail.
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