BULLETIN

of the

Mahoning County Medical Society

Organized 1872

"No backward step should be taken through repeal or amendment of sound laws that have proven their value as public safeguards."

Committee on Public Policy
Ohio State Medical Ass'n

August, 1936

Volume 6 Number 8

ΑΣΚΛΗΠΙΟΣ ΑΣΚΛΗΠΙΟΣ

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THE MAHONING COUNTY MEDICAL SOCIETY BULLETIN

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Inquiries and remittances for advertising or subscriptions should be addressed to Dr. J. L. Scarnecchia, 338 Lincoln Avenue, Youngstown, Ohio.
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PRESIDENT'S PAGE

There has been some agitation in the past few months seeking to establish a venereal clinic in Youngstown. It has been stated that such a clinic is needed badly. Why? Because treatment at such a clinic is more effective than in a private physician's office? We think not. If you or any of your family were so unfortunate as to contract a venereal disease we do not believe you would prefer, or even accede to, going to a city or county operated venereal clinic. You would go to your own family doctor or to a specialist in whom you had confidence. Then why deprive the indigent of his free choice of physician when the means of obtaining such is at hand? Under our Medical Relief Plan as administered in Mahoning County such indigent cases can receive proper and efficient treatment, with discreet privacy, in the office of the physician of their choice. They can receive treatment just as readily for any venereal disease as they receive treatment for any other ailment—this through an already established and efficiently operating medical relief office. Cases treated through this office are practically all indigent or near indigent cases for here we have the services of a trained staff of investigators. The abuses of the free clinic, which we have all seen so much of in the past, are not allowed. The young business man or the mill roller from Sharon, Sharpsville or Girard does not blithely come in, give the address of a rooming house on Rayen Avenue, and add his quota of grief to the local problem. This would surely occur all over again with a "self-supporting" city clinic. They have been talking of establishing this clinic in Youngstown with city funds and then having it self-supporting, thus taking the financial burden of these cases from the county. What provision will then be made for the care of venereal cases in the county not resident in the city? Did you ever see such a clinic that was self-supporting? Do you think this one would be?

Dr. Ryall, in his article in the June *Bulletin,* states that the Montgomery County Medical Society endorsed the establishment of such a clinic in Dayton. Perhaps so. They do not have a Mahoning County Medical Relief Plan there. Our plan has been commented upon very favorably in the Ohio State Medical Journal and in the American Medical Journal for its comprehensiveness and its practical adaptability. It might be well to secure the endorsement of the majority of the medical men here before proceeding with such an undertaking. The Council of your Society has never been asked for opinion or aid by those seeking to establish a clinic. Council has investigated and recommended adherence to the present plan. We believe that with understanding and coöperation the present plan can be made to serve for all types of indigent medical cases, and that there is in fact no need for the establishment of any additional clinic for the treatment of any special classification of diseases at the present time.

DR. L. G. COE.

BULLETIN
of the
MAHONING COUNTY MEDICAL SOCIETY
AUGUST 1936

NEW RELIEF ACT ENACTED BY STATE LEGISLATURE

On Monday night, July 20, the State Legislature enacted a new poor relief act, appropriating approximately $8,300,000 from state funds which will be distributed among the counties to assist them in meeting relief needs for the balance of 1936.

The new act is a substitute for the law enacted last January, and which would have expired on July 31.

You and your colleagues will be particularly interested in learning that *the provisions with respect to medical attention are liberalized in the new relief act.*

Through amendments to the definition of the term "direct relief," the new act permits the use of state funds by local poor relief officials for *"physicians' services wherever rendered."*

The expiring relief act restricted the use of state funds to "medical attention in the home of the individual aided."

In general, the new act is in accord with the sound policy of decentralization of relief administration. It places county commissioners in command of relief activities in the respective counties and delegates to them broad discretionary powers.

A more detailed explanation of the act will be published in the next issue of *The Ohio State Medical Journal*, which will be in your hands on or about August 1.

During the arguments pro and con on the new relief bill, some interesting authentic figures were submitted to the Legislature, showing how much each county will receive from state funds for the rest of 1936; how many Carey Relief Bonds remain unissued in the respective counties; and the balance available in the counties from Carey bonds already issued.

Figures for your county are as follows:

Allocation from state funds under new act.....$271,793.60
Carey bonds unissued...
Carey bond money now available $237,925.75

It is likely that the total amount appropriated by the Legislature to assist in relief activities for the balance of 1936 will not be sufficient to meet the needs of some counties.

Rigid economy will be necessary in most counties. Therefore, it is suggested that *physicians* rendering medical attention to those on relief *cooperate* 100% *with their local relief officials. Unnecessary and excessive services must be banned.* Unless the

medical profession does its best to keep expenditures for medical attention at a just and reasonable figure, the reaction will be adverse and reprisals may be attempted in the form of restrictions on medical attention. The Legislature has been fair and square. It is up to all physicians handling relief cases to reciprocate.

CHARLES S. NELSON,
Executive Secretary.

Radio Talks Over WKBN

Dr. C. A. Gustafson, July 13, 1936—Title, "Headache."

Dr. M. Bachman, July 20, 1936—Title, "If We Had Only Known."

Dr. J. L. Fisher, July 27, 1936—Title, "Some High Spots in Fifty Years of Medical Progress."

Dr. Samuel Schwebel, Aug. 3, 1936—Title, "Health Through the Ages."

DR. JOHN NOLL.

Youngstown Hospital Interne Alumni Reunion

The fourth annual reunion of former internes of the Youngstown Hospital was held at the Country Club on Thursday afternoon and evening, July 23, 1936. And for the second consecutive year the reunion drew a rain check from Old Jupiter Puluvius. However, it was not so bad but what many of the foursomes were able to complete play and cash in on the prizes.

The interim between showers was spent in pursuing dame fortune in various disguises, with luck, good, bad and indifferent. Dinner was served to about 80 former internes and staff members. Internes of former years from out-of-town were: H. B. Ashworth, Moundsville, W. Va.; R. E. Gardner, Green Springs, O.; D. J. Leithauser, Detroit, Mich.; Louis Ruber, Cleveland, O.; Theo. R. Shrop, Akron, O.; H. A. Smith, Dristolville, O.; and Frank H. Sweeney, Mt. Gilead, Ohio.

Officers for the ensuing year were elected as follows: L. E. Phipps, President; A. E. Brant, Vice President; John Noll, Secretary.

An interesting telegram from Boston came too late to be read, but portrays the old spirit. It read—Answer present for us," and was signed, Deitchman, Hughes, Myers, Weaver, Askue, Coombs.

Important Issue

This issue of *The Bulletin* makes its introductory bow to many new individuals on our mailing list, and also fails to reach the desks of many who have previously received it.

To those, to whom it is a newcomer, we bespeak your consideration and perusal.

Much of the material pertaining to the profession and hospitals of Mahoning County will not interest you, we know. The articles appearing upon its pages are usually papers presented at stated meetings of the staffs of the Youngstown Hospital and St. Elizabeth's Hospital. While it is a fact that these are not original articles in the sense of being based upon original research, yet we feel that they are at least last minute resumes of the current knowledge of the subjects of which they treat, and for that reason are worth reading.

We believe that our scientific programs are also worth your considerations, and, if possible, your attendance; especially our postgraduate assemble held in April of each year. We have been favored with a wide attendance upon this activity and trust that the addition of new names to our mailing list will be productivity of new and wider acquaintanceship.

H. E. PATRICK, *Editor.*

August Picnic Postponed

The Entertainment Committee, Dr. F. W. McNamara, chairman, announces postponement of the proposed picnic on August 23rd. Instead it will be held on September 17th. Further announcement will be made in the September *Bulletin.*

St. Elizabeth's Hospital, 1911

HISTORY

The movement which terminated in the establishment of the St. Elizabeth's Hospital dates back to the year 1909. In July of that year, Monsignor Mears called a meeting of representative clergy and laymen for the purpose of discussing the possibility of establishing a Catholic hospital in the city of Youngstown. The meeting resulted in the formation of a committee to solicit funds for a hospital to be placed under the management of Sisters.

Besides a general subscription which raised about $10,000, various other measures were employed to obtain means for the project. Early in 1911, sufficient funds had been raised to facilitate the purchase of the Fitch property on Belmont Avenue. This consisted of a lot which is a portion of the present hospital site. On this were three frame buildings which by extensive remodeling became the nucleus of the present St. Elizabeth's Hospital.

Late in May, 1911, the Right Reverend John P. Farrelly, D. D., Bishop of Cleveland, assigned the charge of the new hospital to the Sisters of the Holy Humility of Mary. This action of the Right Reverend Bishop was regarded by those who had participated in the hospital movement as eminently fitting, since it was to this Community of Sisters that the people of the Mahoning Valley were indebted for their first hospital, established at Villa Maria in 1879.

The undertaking of laying the foundation and continuing the building program of the new institution was entrusted to Sister Genevieve, who thus became the first Superintendent of St. Elizabeth's Hospital.

The work of transforming the houses into suitable quarters for the sick and for those to attend them began in August, 1911. The largest of the three buildings was remodeled to accommodate 30 patients, that next in size was made to serve as a Sisters' home, and the third as a laundry and a lodging for employees. The fact that all this was accomplished before the end of the year is a tribute to the patient labors of the Sisters and the courageous spirit with which they undertook their difficult task. Sister Genevieve was endowed with a genius for organization. A capable executive, with a vision born of faith, she

resolutely led her band of helpers to overcome the inevitable obstacles attendant upon all pioneer movements.

Many eminent citizens of Youngstown had also devoted unnumbered hours and considerable labor to the cause of the new hospital, and their loyal assistance in planning its beginnings was invaluable. The Institution opened its doors to the public on December 8, 1911.

Within a month after this event, the hospital was taxed to its capacity. The establishment of a School for Nurses in this time further augmented the housing problem. Temporary relief for the situation was supplied by the purchase and remodeling of two pieces of property adjoining the hospital grounds. One house, facing Burke Street, was made to serve as a Nurses' Home; the other, on Belmont, provided additional space for 25 patients.

The benefits accruing from the small hospital served as an impetus to the mounting interest of friends of the young institution. This interest manifested itself in a city-wide campaign for funds for a new building. More than one hundred thousand dollars was raised in a drive in which all creeds and classes participated under the able chairmanship of Joseph G. Butler, Jr. Construction of the new building was begun in 1913 and completed in 1914. On January 14, 1915, the newly finished building, now the north wing of the present hospital, was opened for service, providing accommodations for 200 patients. It was an impressive six-story structure of Italian Renaissance design with commodious sun parlors at north and south ends. Its interior provided for the comfort and complete care of the patient in private rooms and well-ventilated wards. It included spacious operating rooms, well-equipped Pathological laboratory, Pharmacy and X-Ray departments, Emergency room, kitchens and dining rooms. All were carefully planned for perfect convenience and service.

In 1916, with Sister Genevieve's election to the Superior Generalship of the Sisters of the Holy Humility of Mary, came the appointment of Sister Geraldine as new Superintendent of St. Elizabeth's. One of the first group of Sisters assigned to the hospital and a member of the first class to graduate from its School for Nurses, Sister Geraldine brought to her position the outlook of a skilled nurse familiar with all the problems of the institution. The solid foundation laid, it remained but to adhere to the highest standards in the hospital, the medical, and the nursing fields. With this ideal in mind, St. Elizabeth's soon won both state and national recognition. This approval was gained in spite of the fact that the hospital was beginning to re-live, in its once ample building, the history of its struggle against over-crowded conditions. The ever-increasing number of patients and the multiplication of administrative duties were but an incentive to Sister Geraldine who not only did not retrench the ministrations to the sick, but extended the facilities of the hospital by opening a free dispensary in 1921.

1918 witnessed the appalling epidemic of influenza throughout the country. In this crisis, St. Elizabeth's Hospital demonstrated its vital position in the community. Mother Genevieve, whose active interest in everything that called for her charitable participation characterized her new field of labor as well as her old, became one of the foremost leaders in organizing volunteer nursing service for the relief of the sufferers in Youngstown. The hospital itself cared for as many patients as its facilities and space allowed.

September of 1922 brought a new Superintendent in the person of Sister Marie Hortense, whose attachment with the hospital as pharmacist during the previous eight years had prepared her for the arduous duty of coping

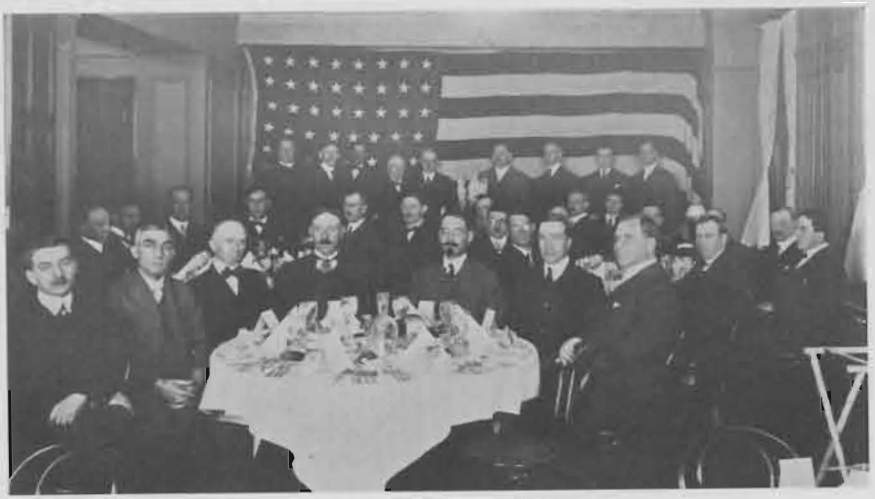
Present Hospital

with the increasing need for additional space in all departments. Wards which had been built to care for 12 patients were being utilized for as many as 16; the sun-parlors had been gradually brought into service as wards. The hospital was out-growing its capacity, and the Nurses' Home was proving inadequate for its purposes. Under the leadership of Sister Marie Hortense, many of the difficulties which were beginning to handicap the institution in the attainment of its full measure of efficiency were eliminated.

In a city-wide drive of which Hugh W. Grant was general chairman, a one-day solicitation of funds was made on September 14, 1926. More than one hundred and twenty-five thousand dollars was contributed in cash and pledges.

The plans outlined during the campaign provided for a structure which would relieve the pressure exerted by the double need of the growing institution, namely, room and facilities for patients. A modification of these plans followed negotiations for the purchase of the Stambaugh mansion located on Belmont opposite the hospital. This property was secured in November, 1926, and in the next year was remodeled to serve the nurses for home and school. It was opened in July, 1927, and formally dedicated on October 19 of the same year.

In due time the plans for the addition to the hospital proper were completed. On Sunday, July 8, 1928, the Most Reverend Joseph Schrembs laid the cornerstone of the new building. During the accompanying ceremonies, the Bishop, the city officials, and other guests on the occasion, praised the character of the hospital that had rendered much laudable service to the community throughout the years since its foundation in 1911. The new building, completed in January, 1929, received eight patients from the old wing on February 3. The formal dedication took place on April 22, 1929, and the public opening was held on Hospital Day, May 12 of the same year. The new unit followed the design of the north wing in exterior appearance, and with some modifications, its interior. The two wings were adjacent to each other. The entrance to the first unit gave place to a beautiful central connecting entrance and lobby, the whole present-



First Staff Meeting of St. Elizabeth's Hospital, 1915

ing the gratifying appearance of a single structure.

In the same generous spirit which the people of Youngstown had ever evinced in the previous developments of the hospital, a host of enthusiastic citizens, social groups and business firms, donated rooms, equipment and furnishings for the new St. Elizabeth's. The new addition included a Maternity Division covering two floors, private rooms on two more floors, quarters for the Sisters, offices, dining rooms for student and graduate nurses, a new Pharmacy, and a complete unit for the operation of a large Dispensary service. The hospital capacity for patients was raised to three hundred.

When Sister DeLellis, the present Superintendent, assumed her duties in 1931, it remained for her to utilize the splendid facilities of St. Elizabeth's toward further solidification and efficiency. With the problems of space and equipment solved, there arose a reasonable demand for growth in special service departments. Sister DeLellis undertook this development with a complete understanding of existing needs. Under her able direction the following departments have widened their fields of service: Surgery, by the addition of an operating room; Laboratory, by the inclusion of a special room for blood chemistry and an office for laboratory records; X-Ray, enlarged to accommodate two new portable x-ray and a 250,000-volt deep-therapy machines; Pediatric, equipped with steel and glass cubicles and remodeled to provide both an isolation ward and room, a treatment room, and a milk laboratory; a Solarium and sun-roof constructed above the sixth floor to provide a place for sun and fresh air treatments for orthopedic patients.

In appreciation of the expansion of St. Elizabeth's and the development of its special departments, The American Medical Association has recently recognized and approved the hospital for residences in special branches of medicine and surgery.

Thus comes to a close a brief history of St. Elizabeth's Hospital from the institution's humble foundation 25 years ago to its present status as a vital force in the care of the health of the people of Youngstown.

The Staff

In 1915, upon the opening of the

first unit of the present hospital, the first staff was organized with Dr. R. E. Whelan who, as president of the staff, had been identified with St. Elizabeths' from its very inception. Quietly active in spurring the campaign preliminary to the foundation of the hospital, Dr. Whelan for two years shouldered many of the tasks usually incumbent upon a full hospital staff.

With the growth and expansion of the institution, the number of prominent members of the medical profession attracted to the staff of the hospital, steadily increased. Dr. Whelan continued as chief. Under his leadership, the hospital followed the most approved trends in medical science by departmentalizing its service. This principle has brought the institution to the highest degree of efficiency in point of skilled service, specialized equipment, and adaptability to progressive improvements.

The growth of the hospital staff from a group of six members in 1915 to sixty-two in 1936 is an indication of the necessary parallel development of the hospital activities in general because without the recognition accorded its capable staff of physicians, St. Elizabeth's could not maintain its present position among the finest hospitals in the country.

The present Chief of Staff is Dr. C. D. Hauser who has been a staunch supporter of St. Elizabeth's Hospital since its foundation. During his administration, the staff has widened its scope of activities by the excellent clinical material presented at its weekly conferences and also by the stimulation of postgraduate work among its members.

THE TREATMENT OF ARTHRITIS

By DR. A. M. ROSENBLUM

In the past, and that not too distant past, no disease that has come to the attention of the physician has been more unsatisfactory to both the patient and the physician than the treatment of arthritis and rheumatoid conditions. This can be accounted for by the consideration of several factors.

Foremost of these is the fact that the arthritic problem involves more fields of medicine than does any other disease, with the possible exception of syphilis.

Second. As you know the actual symptoms of this disease are so varied and bizarre that the diagnosis is difficult often to the most experienced. In fact, Pemberton is of the opinion that frequently it takes a group including neurologist, internist, orthopedist, and roentgenologist to rule in or out a specific case.

Third. The necessity of meticulous surgical procedures in the removal of foci of infection. An incomplete removal or one that is too extensive at one sitting may leave the patient in a worse condition than if he were not surgerized.

Fourth. The essentials of physiotherapy must be delegated to those especially trained to properly carry out these procedures. The result to the patient between proper and improper physiotherapy frequently spells success or failure.

Fifth and finally. More time is required for the proper comprehension of arthritis than any other single topic in medicine.

With the above introduction and recalling to your attention the previous papers on symptoms, etiology, and pathology, I shall endeavor to take you through the intricate paths of treating an arthritic patient. I like to think of this problem from four distinct view points:

1. The Physician.
2. The Patient.

3. The Disease.
4. Prevention.

With your indulgence we will consider heading number one, viz., The Physician.

The doctor who indulges himself in treating these unfortunates must first be an optimist. He must have patience, kindness, and faith. He must be meticulous in his search, for by now you must certainly see that the arthritic is a combination of many things and factors. No one type of treatment is a panacea, but the sum of all the treatments including treatment of infection, foci, soil, endocrine glands, blood, blood chemistry, basal metabolism, diet, vitamins, medicines, specific vaccines, foreign protein, physiotherapy, rest, etc., is what really produces the desired results in this disease.

As soon as a complete study of the case has been made and the patient properly delegated to the group of arthritics, the physician should first give the patient a psychic or psychological treatment. This conclusion is based on the following facts. As a rule when a patient receives his first diagnosis of this dreaded disease his morale falls, for he knows of his mother, aunt, sister, brother, or neighbor who is a deformed, hopeless, agonized cripple as the result of this disease, no help, no hope even after having tried numerous doctors, cultists, quacks, and resorts. Naturally, this frame of mind is not conducive to improvements. Therefore, we always preface our remarks with the statement, "Modern science and the pioneering research clinicians have paved a way so that many cases of arthritis can be cured and the rest markedly helped." That he or she, the patient, must believe, must be optimistic, coöperative and have patience. The results might be slow but as in tuberculosis and other chronic diseases, cures are not obtained over night, but by long hard coöperative following of orders. The important thing is, "cures are obtained."

Under our second heading, viz., the patient, it is well to further consider the type of individual that is afflicted with this disease. Generally, especially in the atrophic type, the soil is suitable for infection to develop. It afflicts the pale, weak, aesthetic type of individual who has difficulty in throwing anything off. Naturally you would not treat him as you would the type of individual who gets the hypertrophic type. This patient is older as a rule, over weight, plethoric, with minus basal metabolic rate, etc. Therefore, the type of patient determines the type of treatment as much as does the disease.

We also like to divide our third heading, viz., the disease, into three parts:

1. Immediate relief—temporary.
2. Curative.
3. Corrective.

Under the first, viz., immediate relief, until treatment gets under way we classify the following:

1. Psychic, which has already been discussed.
2. Relief of pain by
1) Salicylates.
2) Heat.
3) Codeine.
4) Temporary orthopoedic measures as placing affected painful parts in the easiest and most restful position.
5) Mild hypnotics for sleep.

With the above treatments instituted one may leisurely start the curative measures. First and most important of these are rest in bed. This brings more results than is apparent on the surface. Trauma is lessened. Fatigue, asthenia and general inertia, the commonest symptoms complained of are lessened. Edema around joints reduced, and a reserve is established, without which no convalescence, arthritic or otherwise can be accomplished.

Sometimes partial bed rest is ad-

visable an hour after each meal, fully stretched out. This procedure like all others in treating arthritis is distinctly individual and therefore, each case should be handled individually.

The next step is the treatment or removal of foci of infection. We know that all of us have seen arthritics that have had wholesale removal of possible foci of infection, and still had their arthritis. As stated before there is no panacea in the treatment of this disease, therefore, removal of foci should not be condemned if it fails. In our experience the most dramatic results have followed the removal of abscessed teeth and other foci. The following rules must be observed:

1. That the focus to be removed or treated is actually a focus.

2. If it is a focus, let's consider it be a tooth, it must be removed aseptically, with as little trauma as possible. The socket should be carefully kept cleansed and only one or two teeth should be removed at one time. No further removals until patient is well out of the first procedure; several days or a week or two, depending on reaction. A culture should be made from apical abscess. The expert should carefully be on the job till all infected teeth are removed, all gums healed and the mouth in healthy condition. Pyorrhea must be eradicated. One cannot emphasize how meticulous this work should be in order to get the desired results. Gum and processes must be x-rayed so that no roots are left.

3. If it is decided that the tonsils are at fault, these must be carefully and completely removed, not partially and not roughly. New pathways of infection are opened by roughness so that the disease may spread rather than be controlled.

4. As to sinuses, as a focus, a much greater problem exists. If the antrum of Highmore is infected it should be opened and drained, but the other sinuses, we believe, should be treated conservatively and gently.

5. The prostate is the next commonest site, not as to G. C. infection but as to streptococci and staphylococci mostly. Many observers believe it is only infected secondarily to teeth, tonsils or some other organ. It is almost always silent, and generally improves with general improvement of the patient, removal of other foci and some massage which must be carefully and gently carried out.

6. Infection of gall bladder. We are presuming that this has been proven by x-ray, dye, or Lyon's-Meltzer drainages. Some of these cases with stones and non functioning gall bladders should be surgerized. Delayed function can frequently be markedly improved by several medical drainages. Much can be said of this treatment. We call it to your attention as having been beneficial in several cases that came to our attention.

7. Role of Intestine. Here I desire to quote from Pemberton. "There is now to be considered the question of the relation of the intestinal tract to arthritis in a sense other than that of harboring focal infection in the usual meaning of the word. This phase of the etiology and pathology of arthritis is by no means as widely appreciated as its importance deserves, notwithstanding the fact that malfunction of the intestine as a whole plays a very much more frequent and important role in arthritis than do the various surgical infective processes of the intestinal tract collectively."

The type of colon which is met in many arthritics is characterized by a greater caliber, greater length, more convoluted appearance and sometimes reduplication. The bowel has a smooth appearance. A colon of this type can be expected in an arthritic with thin abdominal wall, wide pelvis, narrow costal angle and asthenic, elongated build. This type of bowel is frequently explained by an unbalanced diet and avitaminosis. What has impressed us is the return of such a bowel to a

near or normal condition by proper diet, vitamins and general treatment. Several factors have impressed us:

1. That cathartics (active) in such cases generally do harm.
2. Lubricants and Brewers' yeast do good.
3. Flax seed enemas are of great value.
4. Colonic irrigations properly given in selected cases are advantageous.
5. Hot moist compresses to abdomen after each meal for ½ hour are of value.
6. Diet, of which we will speak next is of greatest importance.

Recently there has been a growing understanding of the relation of nutritional states to health and disease.

We mentioned earlier in this paper the inadequate constitution and faulty body build as conspicuous factors of the soil in which the arthritic develops.

In animals through the influence of unbalanced diets, symptoms have been produced which characterize arthritis. However, chronic arthritis is not to be considered as the result of any single dietary deficiency. Therefore, no single dietary factor can be a specific for the treatment of the disease.

Diet assumes a very important position in this disease, but again we must be guided by the individual. We lay stress on the following types as to the diet we prescribe.

1. The individual with that "peculiar soil" mentioned several times before. He or she is generally underweight, anemic, and shows the peculiar or characteristic bowel configuration. This type of patient has generally been on a poorly rationed diet. If in addition this patient shows no demonstrable focus of infection then we feel sure that diet and bowel assume larger and larger responsibility for the arthritic symptoms. In such a patient, even in the face of the knowledge of the delayed sugar removal, not the "lowered sugar tolerance" as so many contend, we place this patient on a simply prepared, easily digestable, high coloric, high vitamin content, low residue diet: milk, butter, cheese, and orange juice play a large part in this diet.

2. Likewise the individual who is overweight, who has been overeating and who most likely shows the hypertrophic variety, will do remarkably well on a balanced but low coloric and low carbohydrate diet.

It is also to be noted that sugar tolerance or sugar removal improves with improvement of symptoms in these cases. Much can be said of diet, but the principles expostulated above have served us well. We do not believe that oranges, tomatoes, etc., the so-called and erroneously so-called acid foods should be limited, nor do we believe red meats to be injurious. The above principles are not mandatory; again we reiterate, the individual case requires individual treatment. All in all the above will give in conjunction with all other needed treatment gratifying results.

Before leaving the subject of diet a word should be said concerning marked limitation of diet for a period of time. A regime as below, on occasion can be of great value. We have used this diet when our regular diet did not give good results:

1st and 2nd day—Juice of one orange TID: ample water.

3rd day—Juice of one orange TID: 1 cup of coffee; no sugar.

4th day—Same as third day, plus 8 ozs. vegetable soup.

5th day—Same as fourth day, plus 3 Uneeda Biscuits.

6th day—Semi-liquids.

7th and 8th day—1221 Calorie.

9th to 38th day—1465 Calorie.

39th day—1800 Calorie.

After a case has progressed satisfactorily for three or four weeks, cod liver oil ZT TID should be added, both for vitamin and extra fat.

Colonic Irrigation

In the earlier paragraphs of this paper you will recall the description of a widened reduplicated colon with poor haustrations that is so frequently seen in these arthritic patients. In addition, these patients have a great deal of intestinal trouble, poor evacuations, foul smelling, with mucous, pain and soreness. It is true that we have seen not a few of these cases clear up on diet and other measures used to restore health and by clearing up we not only mean active symptoms but x-ray evidence as well. Yet there are some when more active measures must be restored to. In these we have resorted to high and low colonic irrigations with abdominal massage, judiciously given. Some of these cases were benefited.

We are not colonic irrigation enthusiasts. Much has been said and much written on the subject. Many hold that putrefaction and increased bacterial flora even though the latter may be normal inhabitants of the colon, play a great role in the production of arthritis. Some especially lay stress on a streptococcus found in the stools as being especially detrimental. Cruikshanks, who has done a great deal of work in this field, is firmly of the belief that too much stress has been laid on the importance of this phase of the disease. Be this as it may, we do know that we must cause an improvement in the intestinal situation or we do not get an improvement in the arthritis. As stated before this becomes one of the systems and set of symptoms that must be studied and treated individually.

If colonic irrigations are given, care must be exercised, a soft tube must be used, force must be avoided, and the patient must not be left exhausted. We generally employ normal saline solution or 5% sol of soda bicarbonate slightly above body temperature, 40°. We use about three gallons of solution and sometimes more. The patient must not suffer real pain.

Vaccines: It is safe to say that, no single method or type of treatment used in arthritis, is under as much dispute as the use of vaccines. Those that believe that it is efficacious, go to great lengths to show that arthritis is the result of infections. The most accepted organism is the streptococcus hemolyticus. We are not entering this dispute. We have followed Cecil, and Pemberton, the latter not as enthusiastic as the former. Yet he advises an open mind, since there has been a measure of success in properly selected cases. In our series of cases we have treated especially those corresponding to the atrophic type with a stock Vaccine of Cecil; intravenous route was used almost exclusively and graduated doses of dilution numbers 1, 2, 3, and 4, used. The dose was started very small, generally 10,000,000, and gradually increased, always trying to avoid a marked systemic reaction. The vaccine was administered at intervals of five and seven days. Stock vaccines made according to Cecil were used. We feel that specific vaccine therapy has been a great help to us in many cases, but again we wish to emphasize that there is no single panacea in the treatment of this disease. Add up everything the patient needs, the sum of all of these is the treatment.

Non-Specific Protein: To this type of treatment we have resorted to quite a few times, both intravenously in the form of typhoid vaccine and intramuscularly as one of the milk preparations. The former can be quite dramatic producing fever, chill, prostrations. We are very careful and sparing in this method of treatment. If the dose is kept small enough, say 25,000,000, and increased according to reaction, it has a small place in our treatment. As to the intramuscular, we use that frequently in the hypertrophic type. We think it has a distinct place. We generally give an injection every 7 and 10 days.

Physiotherapy. Physiotherapy measures have probably as much value

in the treatment of arthritis as any others at our disposal.

It is our purpose not to be too enthusiastic about any single type of treatment in arthritis, but we do believe that physiotherapy has been much neglected by our profession. Weir S. Mitchell was among the first to utilize the advantages of physiotherapy in the treatment of types of nervous disease especially functional. Many nervous diseases of a functional nature arise from the same "soil" which is common also to arthritis. It follows that if massage, heat, (external) sweating processes, etc., are of such great value in N. D. (functional) likewise they should benefit arthritis. And they do, if properly and scientifically applied. We will not go into detail but we have depended a great deal on heat, infra lamp, baking and massage. The latter is an extremely valuable aid. Pemberton classifies five major indications for massage.

1. To prevent or delay atrophy of muscle tissue and to help restore tissue when atrophy has taken place.
2. To improve the local and general metabolism.
3. To increase the extent to which the circulating blood reaches certain tissues and to increase the return to the circulation of many corpuscular elements tucked away in inactive regions.
4. Mechanical influence in massage aiding return of blood to heart. Normally accessory part played by action of muscle on large veins.
5. Relief of pain in myocitis.

The above has principally applied to massage of muscle, the same applies to joints; needless to say, care, gentility and understanding are prerequisites.

Naturally, since massage is so important, it follows that exercise by active motion and passive motion must have their place in the treatment of arthritis. When the arthritic becomes accustomed to general and local massage active motion is of great importance if there is limitation of range of joint movements. Like with massage, great care must be used to avoid irritation to an inflamed joint. It is to be remembered that in a subsiding arthritis passive motion may perpetuate the inflammation.

Active exercise should be the goal toward which both patient and doctor should work from the beginning of treatment. Many atrophic arthritics have learned from their own experience that walking or playing some games helps them. Exercise within limits is the physiological antidote of the rheumatoid process, especially as to the muscular structures.

Postural exercises as recommended by Goldthwaite and others are of great value.

We have previously mentioned rest as an important factor. This can be complete or partial, but its importance should not be forgotten.

Among other physiotherapeutic measures may be mentioned diathermy, radio thermy, ultra violet light, farradic current, all have a limited usefulness.

Drugs

In no other disease have so many drugs been advocated and found wanting. We have relied on the following:

1. Salicylates.
2. Codeine.
3. Phenobarbitals.
4. Iron.
5. Arsenic.
6. Liver extract.
7. Iodides.
8. Cod Liver Oil.
9. Yeast.
10. Lubricants, as mineral oil.
11. Thyroid Extracts.
12. Vitamins.

If space and time permitted each of the above could and should be separately treated, but as such is not the case we desire to stress that salicylates have all the virtues with less of the vices than the many drugs

having a like action, a high price and supposedly high curative value.

One other agent that has proven itself beyond question is parenteral liver extract. We have seen it do the following in addition to its therapeutic action:

1) Increase leucocytosis.
2) Improve liver function.
3) Aid absorbtion from the Int. tract.
4) Increase appetite.
5) Improve intestinal tonus.
6) Lessen toxamia.
7) Aids in carbohydrate metabolism.

Naturally we put much stock in its use.

With your permission we will leave the active treatment realizing that much has been left unsaid, and a few words about the preventive treatment.

This can be summed up in a few words—"from early childhood—try to change the soil"—give this handicapped individual extra care, treat small ailments thoroughly and energetically, especially upper respiratory infections. Early remove foci of infections. Put on high vitamin diets. Keep their blood up to highest normal level. Advise change of climate in cases not doing well. Stress elimination hygiene. Avoid stress and fatigue. Do not permit overloading with school work. In every way handle these individuals as underprivileged—and we feel sure much can be accomplished.

POSTGRADUATE COURSE IN ENDOCRINOLOGY

The Program Committee, through Dr. J. N. McCann, announces a course of ten lectures on Endocrinology by Drs. Roy and E. Perry McCullagh of the Cleveland Clinic, to begin about the middle of September. The cost per member attending will be between two and three dollars. All physicians within easy driving distance of Youngstown are invited to register. Definite announcement of date and place of meeting will be sent out by the Committee about August 15th.

The tentative program is as follows:

1. Testicular Deficiency, Impotence, Sterility and Prostatic Hypertrophy.
2. Functional Diseases of the Ovary.
3. Addison's Disease, Intersexuality, and other Adrenal Disorders.
4. Goitre, Hypothyroidism, and the Clinical Use of Thyroid Preparations.
5. Hyperthyroidism with Special Reference to Differential Diagnosis, Atypical Forms, and Complications.
6. Calcium Metabolism and Disorders of the Parathyroid Glands.
7. Diabetes and Hyperinsulinism.
8. Obesity and Disorders of Fat Metabolism.
9. Pituitary Hormones and Growth Disorders.
10. Pituitary Tumors, Cushing's Disease, Frölich's Syndrome, and Pituitary Cachexia.

Modern Medical Aphorisms

"It may be stated as a basic truth that no 'limited' or 'single system' treatment is a panacea for diseases and injuries."

"The medical profession is the source of accurate and scientific information and advice on all medical and public health questions."

"'Medicine' is and should be considered *any* and *all methods and treatments* for diseases and injury."

"It would be unwise and unreasonable for the Legislature to approve a 'system' of practice on any and all types of physical and mental ailments, which system, itself, ignores disease and denies the value of scientific medicine." (Christian "Science".)

—From report of Committee on Public Policy, Ohio State Medical Association.

NEWS NOTES

St. Elizabeth's Hospital announces the appointment of Dr. William Dean Collier as full time Pathologist. Dr. Collier has an M. D. from John Hopkin's University, 1924; and an A. B., A. M., and Ph. D. from the University of Missouri. For the past nine years he was Director of the Department of Pathology of the hospitals associated with St. Louis University, and for the past seven years has been full professor of pathology at that University.

The Staff of St. Elizabeth's Hospital had their annual picnic and golf tournament at the Squaw Creek Country Club on Thursday, July 23. Dr. E. J. Wenaas won the prize for low gross for the 18 holes of golf. Dr. F. W. McNamara ran him a close second. Dr. J. M. Ranz demonstrated his superior skill in Skeet shooting.

Dr. R. B. Poling is spending several months in the East where he has taken a course in Allergy at the Brooklyn Jewish Hospital, and is now at the Harvard University Medical School for a special course in Cardiology. Dr. Poling recently resigned his part-time position as Pathologist to St. Elizabeth's Hospital to devote his entire time to the practice of internal medicine.

On Thursday, August 27, former internes of St. Elizabeth's Hospital will have their first annual reunion. This get-together will be in conjunction with the Twenty-Fifth Jubilee of the Hospital. The program for the day will consist of a series of 12-minute papers by Drs. F. W. McNamara, E. H. Nagle, M. W. Neidus, P. J. McOwen, J. B. Birch, S. J. Tamarkin, T. K. Golden, and J. Nagle. The meeting will begin at 9:30 A. M. and will be held in the Hospital auditorium. Following the noon-day lunch there will be golf and dinner at the Youngstown Country Club.

Drs. B. B. McElhaney and J. Wasilko announce the opening of their offices in the Home Savings & Loan Bldg.

Dr. L. Shensa has opened his office in the Dollar Bank Bldg., and is associated with Dr. J. M. Ranz.

Dr. Samuel Goldberg is vacationing at the Boy Scout Camp as camp physician.

Dr. W. D. Collier gave a talk on The Interpretation and Clinical Application of the Schilling Hemogram at the regular Friday morning clinical pathological conference, July 24.

Mrs. Anna Hobbs announces the engagement of her daughter, Ethel, to Dr. P. J. Mahar.

Secretary's Report

The annual picnic of the Society was held on July 30, 1936, at the Youngstown Country Club. The members had a very enjoyable time, especially those who like to "golf it" occasionally.

The guests enjoyed a very sociable evening and dinner, and the committee is to be congratulated on a very successful day.

The new Medical Directory from the A. M. A. is now on file at the Secretary's office.

REVIEW OF DIAGNOSTIC METHODS AND THE TREATMENT OF PERIPHERAL VASCULAR DISEASES

By SAMUEL H. SEDWITZ, M. D., F. A. C. S.

The study of these diseases affords new information concerning the anatomy and physiology of the autonomic nervous system and capillaries. This prompts profound delving into new literature and reveals the tremendous strides made in research and study.

The attitude of the doctor to the patient has changed. The local condition of gangrene is not as hopeless as in cancer, and the mutilation by operation is less. No single remedy can be specified and each case is individual as to the selective treatment.

The question of early diagnosis is all important because it prevents much local mortality. The question of diagnosis is essential in differentiating ailments of patients with pain, who have been diagnosed as cases of sciatica, fallen arches, rheumatism, etc.

Early diagnosis has been of such importance that many insurance companies demand examination of the peripheral circulation, during the course of their health examination, in patients of the fourth, fifth and sixth decades.

The recent evidences in the study of peripheral-vascular disease has produced such enormous new findings in anatomy, physiology and therapy that the literature has been flooded and it is almost impossible to glean it all. So great an interest has been aroused that practically every University Clinic has established a vascular clinic connected with either their medical or surgical department.

It is for the plea that early diagnosis be made and proper therapy administered that this paper has been prepared.

The average general practitioner is quite capable, with the ordinary means at hand, to establish the presence of peripheral-vascular disease without the aid of complicated apparatus or intricate study such as is employed by the clinics which are conducting research in these diseases.

Likewise in the therapy, simple measures are available which do not require expensive apparatus, and that can at least ameliorate the condition until such time as the proper physiotherapy is available.

Most clinics advocate and expound upon the value of their particular mode of treatment and do not allude in their writing to other available procedures of treatment.

Situated as we are in a district away from an educational center, and not having any dispensary material available, the result has been that all patients we have treated have been private patients. This has been the rule with the exception of a very few that have been held over from the old administration because of the interest in the progress of their cases. Realizing that results were essential, no one definite treatment has been adopted but a combination of various treatments employed by the numerous clinics, which we have visited, has been used to the benefit of our patients.

It is very essential that the patient be examined to establish his condition in general, not only as to his peripheral circulation, but as to his entire body, cardiac and metabolic, and especially as to the presence of diabetes, etc. Therefore, as a routine, every patient is given a complete physical examination and laboratory study.

A brief description of the history of peripheral-vascular disease will show that the subject has commanded much study for centuries. (This is most thoroughly expounded by Herrmann in his recent book.) Little was appreciated as to the cause of gangrene of the extremities. Smith and Shattock of the Cairo Medical School

(1911) noted that this condition existed in Egyptian mummies. Aristotle in his writings mentions the presence of bone in the heart, probably coronary sclerosis. No mention is made of this condition in the Alexandrian School. Vessalius mentioned the presence of aneurysms, but still did not allude to gangrene resulting from it. Fallopius (1575) noted hardening of the arteries. By 1600 physicians recognized calcification of arteries but did not note the relationship of arterial disease and gangrene. However, in Hunter's School there was noted the relationship of hardening of the arteries to coronary disease. It was not mentioned by his students because Hunter himself suffered with coronary disease. In 1800 Laenac and his workers noted the association of arterial disease with heart trouble. Jeane Crueilhier in 1829 was the first to teach that arterial disease caused gangrene due to obliteration of the arteries and arterioles. In 1829 Lobstein introduced the term "arteriosclerosis." In 1862 Maurice Raynaud wrote his paper on asphyxia, local gangrene, and described vasomotor spasm. In 1878 Weir Mitchell described the disease of Erythromelalgia. In 1892 Schultze called gangrene Acroparasthesia, which was changed in 1912 by Cassirer to chronic acroasphyxia, scleroderma, sclerodactylia, and multiple neurotic gangrene and local shock. In 1908 Leo Buerger described thrombo-angiitis obliterans, commonly called Buerger's disease or Hebrew's disease.

The classification adopted by us is that of Reid.

A. Vascular disease.
  a. Vaso-constrictor.
    1. Raynaud's Disease.
    2. Acrocyanosis (acroasphyxia Parasthesia).
  b. Vaso dilator disturbances.
    1. Erythromelalgia.
    2. Acute painful osteoporosis.

B. Primary organic disease of arteries (papaverine can be used in spasm for diagnosis and treatment).
  a. Traumatic, chemical and thermal.
    1. Embolism and simple thrombosis.
    2. Arterio-venous aneurysm.
    3. Phenol and caustics.
    4. Frost-bite.
  b. Inflammation, toxic condition.
    1. Thrombo-angiitis obliterans.
    2. Specific arteritis, namely lues, TB, etc.
    3. Non-specific arteritis, exanthemata, typhus, typhoid pneumonia.
    4. Also non-specific arteritis due to chronic toxemia, as ergot and tobacco.
    5. Endarteritis undetermined.
  c. Degenerative changes.
    1. Arteriosclerosis, senilis and diabetic.

(*See Table on next page*)

Criteria for Diagnosis

Raynaud's Disease

1. Episodes of change of color of the vasospastic type excited by cold or emotions.
2. Bilateral.
3. Presence of normal pulsation in palpable arteries.
4. Absence of gangrene or its limitation to minimal grades of cutaneous lesions.
5. Symptoms of two years' duration.
6. Absence of any primary disease which might be causal, such as: cervical rib, or organic disease of nervous system.
7. Trophic changes—nose, ears, cheeks.
8. Frequent association of scleroderma, vasomotor type.

Diagnosis

This is of utmost importance. The vast discoveries made in the numerous clinics by research studies aid us materially. Routine examination is essential, especially as to Wasserman reaction, basal metabolism, blood pressure and electro-cardiograph; blood studies for calcium content and blood sugar. There are also the oscillometric readings, skin temperature, and microcapillary studies, Pickering Test and Collens Test, skin temperature before and after vasomotor relaxation, and reaction to heat and cold. There is the Simons claudicatometer, Landis ergometer, Histamine test, Wright and Spier injection test for measuring peripheral circulation and the injection of arteries and the use of x-ray.

Then there is also color changes to

(*Continued on page 246*)

History and Facts in Differential Diagnosis of Peripheral Vascular Diseases

	Tao	Arteriosclerosis	Raynaud's	Acrocyanosis	Erythromelalgia
Sex	Males 99%	Males 90%	Female 57% (Wright's Clinic)	Usually females	Females 70%
Race	Any, mostly Hebrews	Any race	Any race	Any race	Any race
Age	25-30	55-85	17-35	Young adult	30-50
Constitution	All types	All types	Asthenic	Asthenic	Sthenic
Previous Infection	Frequent	Frequent	Emotional instability non-relative	Emotional instability possible local relationship	Non-relative to infrequent
Tobacco	Large amounts	Moderate	Frequent	Frequent	Frequent
Rye	Frequent	Occasional	Occasional	Negative	Negative
Claudication	Usually	Usually	Absent	Absent	Absent
Pain	Present	Usualiv	Rare	Occasional	Present
Rest Pain	Usually severe	Occasional mild	Absent	Absent	Mild to severe
Type Pain	Sharp, knife-like	Aching	Absent	Absent	Burning
Site of Lesion	Any extremity, usually unilateral	Lower extremity often bilateral	Bilat. frequent upper extremity	Usually unilateral one digit	Usually bilateral over entire body

Physical and Laboratory Findings in Differential Diagnosis (Reid)

	Tao	Arteriosclerosis	Raynaud's	Acrocyanosis	Erythromelalgia
Color Changes	Excessive color on descendency excessive	Same Pallor on elevation	None	None	None
Effect of Cold	Mild cyanosis Pallor in 30%	Slight cyanosis 15-20%	Pallor, cyanosis is in all	Cyanosis	Never
Gangrene	Common	Common	Rare	Rare	Never
Type of Ulcers	Moist, inflamed, discharging	Dry	Small-pinched superficial	Same	None
Arterial Pulsations	Diminished to absent	Same	Normal	Normal	Excessive
Edema	Frequent	Occasional	Possible scleroderma	Absent	Absent
Superficial Phlebitis	30%	None	None	None	None
Temperature of Extremities	Low	Low	Low, freatly dilated, full in rubor, stage, stasis	Low with spasm High with relaxation	High
Visualization of Capillaries	Highly dilated, stasis	Moth eaten, small, stasis	Stage, stasis	Large dilated, usually stasis	High, grotesque Sluggish slow
Visualization of Arteries	With dye— x-ray shows blockage	Same plus arteriosclerosis flakes	Negative		Negative

be observed and the effect of posture on these changes.

Pulsation of palpable arteries is a guide but it must be remembered that 4 to 14 percent of subjects show an absence of pedal arteries or other anatomical anomalies where there are no pulsations present.

For the general practitioner most knowledge can be ascertained by palpation of differences in surface temperature, pulsation of palpable arteries; namely: popliteal, femoral, tibials, and dorsalis pedis arteries. The Collens test consists of elevation of the feet with drainage of the venous system and noting the return of venous flow on lowering the feet. The normal time should be about five seconds, showing the return of blood to distal venous plexus near the proximal phalanges of the toes. Another simple test is blanching of the soles of the feet, after flexion and extension of the toes. (Samuels). If no other apparatus is available for claudication test, this can be determined by having the patient take eleven long steps in five seconds (just short of running), and noting how far he can go before claudication. (Collens).

For the testing of deep circulation the oscillometer is the best means we have at hand today. These are quite expensive for the general practitioner but there will be available, in the near future, a type of oscillometer that can be used for blood pressure readings, spinal pressure readings and deep arterial readings, the price of which will be below that of the ordinary blood pressure apparatus. Histamine injections intracutaneously, using the solution of 1:500, produces a bleb the size of the head of a pin. This in turn produces an urticarial wheal normally within 2½ minutes increasing within 10 minutes to ½ to ⅝ of an inch in diameter.

There will also be available a very good working surface thermometer at small cost that has been checked against the thermocouple and found to be within 0.25 degrees correct. The use of this after exposure of limbs in definite constant temperature for half an hour will readily relate the reactive condition of the circulation present.

In obtaining the history of our patients there is special information which we seek, including:

1. Family history of arteriosclerosis, diabetes, angina pectoris, or other heart disease.

2. Past history of lues, chronic tonsillitis, other forential infection, injury, frost-bite of fingers and toes, chillblains, frozen feet or exposure to the extreme cold, phlebitis; where has patient lived most of his life; has sugar ever been found in the urine; has there ever been any suggestive symptoms of diabetes, such as polydipsea, polyuria, polyphagia or nocturia; any history of hypertension or paroxysmal tachycardia.

3. History of present illness.

a. Onset of intermittant claudication.

b. How long a walk can he take?

c. A connection of any injury to foot or extremities or back, if any. Operation for ingrown toenail or callous pared.

d. When and how ulceration or gangrene started; connection and diagnosis of pain in extremities.

e. Is the pain constant, at night only, after a heavy meal?

f. Is pain brought about by changes in posture or use of extremities?

4. Occupation, description of posture of patient while at work:

a. How much disability does the patient have at present? When did it begin?

b. Is there any history of repeated or long standing exposure to chemicals, fumes, gases, radium, paint for clock dials, phenol or any of its derivatives?

5. Personal habits:

a. At what age did the patient be-

gin the use of tobacco and in what form.

b. Average daily amount used at onset.

c. How often has patient stopped smoking, and for how long.

d. What brand of tobacco, cigars, cigarettes is being used at present.

e. What tolerance or intolerance for tobacco.

f. How much tobacco is being consumed each day by this patient.

g. Does patient take warm baths or showers, if so how often?

h. Does he use any medicine or drugs regularly. Ergotism.

i. Does patient drink alcoholic beverages regularly? What kind? How much daily or weekly?

Physical examination.

a. Determine the character of the walls of the large arteries of the extremities, fibrous, diffuse, senescent, corrigated. Types with or without calcification, dorsales pedis, posterior tibials. Marked blood pressure readings in both arms but *not* in the legs, carrying out of special studies in relationship to vascular system of the patient. Do all special studies for peripheral vascular disease. Observe clinical and Roentgenological evidence of ribs and osteoarthritis of spine. Determine volume of pulse of all major arteries by palpation. Record exactly the extent and nature of infection, lymph-angiitis, ulceration or gangrene that may be present.

Before discussion of the therapy of these conditions a brief resumé of the newer physiology and anatomy prompting the treatment will be discussed.

Capillary circulation—walls of the capillary consist of an endothelial layer and an apparent muscular layer, is not continuous but consists of a network of fine fibrils which connect with Rouget cells. These cells and fibrils make up the contractile system of the capillaries. Wright claims the Rouget cells exist. Kuntz claims the capillary vessels are functionally innervated. Krogh claims the Rouget cells are of muscular coating and are innervated by the sympathetics. Landis, Krogh, Lewis have shown the capillary vessels are independently contractile and capable of responding individually in a delicate manner to circulatory needs of immediate adjacent tissues. Krogh believes this independability is of greatest importance to the regulation of blood flow, admitting that arterolar inflow is an increase in venous pressure to effect the balance, but that contractility is capable of overcoming any possible increase in pressure from these sources. Duryee and Wright use the capillary scope employing the two-minute flow test. Under normal conditions the blood will cease to flow after 10-20 seconds of the two-minute period.

Landis mentioned capillary pressure in arteries and venous capillary limbs. The fall in pressure does not cease at the arterial junction but continues through the capillary network and under condition of arterial dilation extends to the venules. 20-30% of peripheral resistance to blood is located in the capillaries. Average pressure in the arterial capillaries in the nailfold in man is 43½ cms. water and 16½ in the venous capillaries. Capillary pressure is a variable quantity. Arterial constriction increases resistance and the capillary pressure falls. It rests during hyeremia, heat, and in the presence of histamine and inflammation; and in these conditions blood flow is more rapid and pulsations become apparent with increase in pulse pressure. In Raynaud's disease the capillary pressure is found to be below 7-8 mm. mercury and during paroxysm may rise to 40 with high pulse pressure. (Landis).

Relation of blood pressure and capillaries to the return of blood is close; rhythmic increase to cardiac systole may penetrate the venous capillaries. Cold first decreases the pressure which later rises with reactive hyperemia.

Increase in venous pressure effects the pressure in capillaries due to obstruction to outflow. This is higher in dependent portions of the body due to hydrostatic pressure of the vertically located vessels. It is most constant in the hand when it is above the level of base of the heart and accordingly higher when hand is below the level of the heart. This study is best brought out by Landis in the review of the capillary pressure and permeability. (See Bibliography.)

Anatomy; Artero-venous Anastomosis

This was first pointed out by Sucquet in 1862. It was further studied by Grant and Bland in 1931 and subsequently more thoroughly developed by Popoff in 1934.

The arteriovenous channels are usually closed and opened on demand for rapid movement of blood. Krogh believes their function is to supply enough blood for the heart. Wright has observed anastomosing veins which connect definite segments of capillary loops to the connecting arterial limb with one or two venous loops. Blood may cease to flow through these but still flow in the loops. These are probably residual veins from the arciform capillaries of early infancy. They are few.

Grant and Bland emphasize the importance of the arteriovenous anastomosis in the part that they play in vascular reactions. The chief function (Krogh) is to maintain heat in exposed parts.

The arterial venous anastomoses are present in the fingers and particularly numerous in distal portions but do occur in soles and palms and all locations in which hyperemic reaction to cold is most marked.

Popoff describes the effect on the glomus (by which he terms these arteriovenous anastomoses) in inflammatory arteriosclerotic gangrene, diabetic gangrene and thrombo-angiitis obliterans. He shows by careful histopathological studies that these glomus bodies exist in the ventral surface of the hand and feet and are present constantly in the region of the nail bed and tips of fingers, in palmar surfaces of the first, second and third phalanges, and the thenar and hypothenar eminences of the hand. The distribution on the foot corresponds to the hand. In the skin they are located a little deeper than the web of the subpapillary artero-venous layer. They are uniform in appearance with narrow and irregular lumina.

(*To be continued*)

For "INTESTINAL TOXEMIA"

KARICIN

The combined absorptive-detoxifying effects of kaolin and ricinoleate aid in—

Detoxifying intestinal bacterial toxins
Checking fermentation
Reducing flatus
Soothing irritated mucosa
Establishing normal bowel action

An average tablespoonful of Karicin contains:

Pure colloidal kaolin . . . . . 53 grs.
Ricinoleate . . . . . 6 grs.
High viscosity mineral oil . . . . 1 ¼ drams

The new flavor insures a new palatability—the same detoxifying properties.

Send for a clinical sample and literature.

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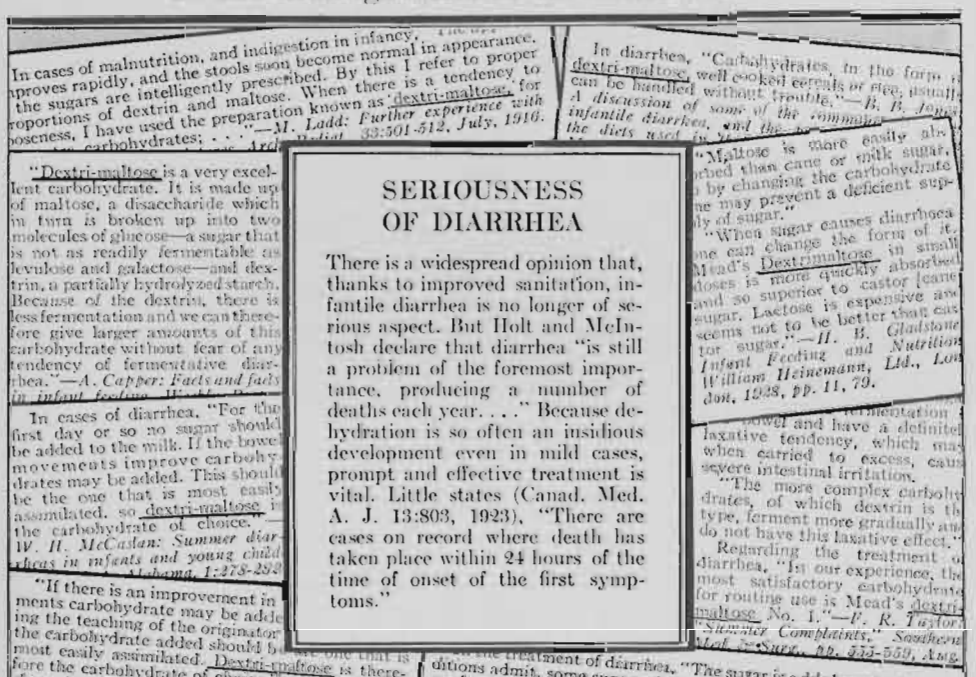
DIARRHEA

"the commonest ailment of infants in the summer months"

(HOLT AND McINTOSH: HOLT'S DISEASES OF INFANCY AND CHILDHOOD, 1933)

One of the outstanding features of DEXTRI-MALTOSE is that it is almost unanimously preferred as the carbohydrate in the management of infantile diarrhea.

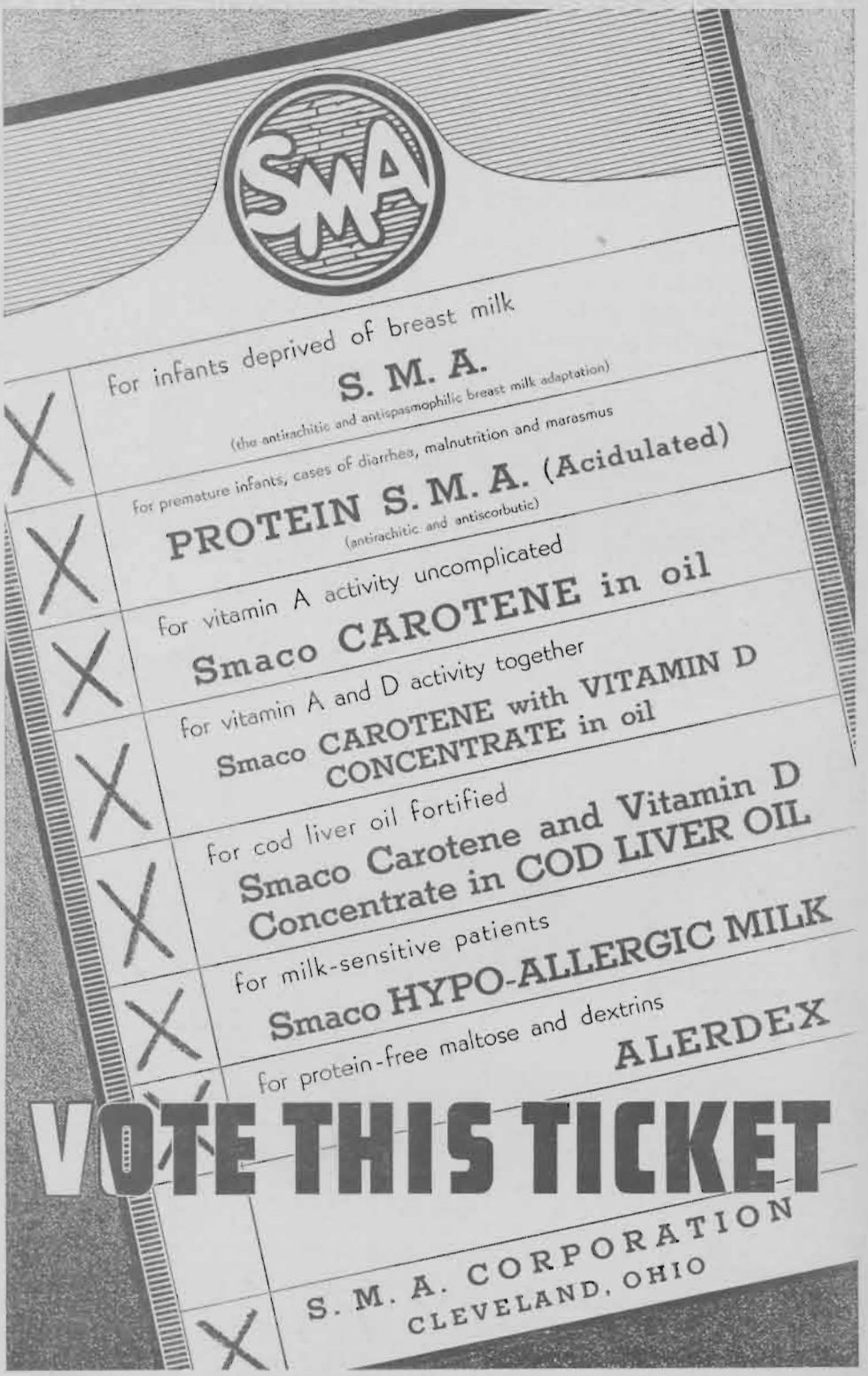


SERIOUSNESS OF DIARRHEA

There is a widespread opinion that, thanks to improved sanitation, infantile diarrhea is no longer of serious aspect. But Holt and McIntosh declare that diarrhea "is still a problem of the foremost importance, producing a number of deaths each year. . . ." Because dehydration is so often an insidious development even in mild cases, prompt and effective treatment is vital. Little states (Canad. Med. A. J. 13:803, 1923), "There are cases on record where death has taken place within 24 hours of the time of onset of the first symptoms."

Just as DEXTRI-MALTOSE is a carbohydrate modifier of choice, so is CASEC (calcium caseinate) an accepted protein modifier. Casec is of special value for (1) colic and loose green stools in breast-fed infants, (2) fermentative diarrhea in bottle-fed infants, (3) prematures, (4) marasmus, (5) celiac disease.

When requesting samples of Dextri-Maltose, please enclose professional card to cooperate in preventing their reaching unauthorized persons. Mead Johnson & Company, Evansville, Indiana, U. S. A.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for infants deprived of breast milk
S. M. A.
(the antirachitic and antispasmophilic breast milk adaptation)
for premature infants, cases of diarrhea, malnutrition and marasmus
PROTEIN S. M. A. (Acidulated)
(antirachitic and antiscorbutic)
for vitamin A activity uncomplicated
Smaco CAROTENE in oil
for vitamin A and D activity together
Smaco CAROTENE with VITAMIN D CONCENTRATE in oil
for cod liver oil fortified
Smaco Carotene and Vitamin D Concentrate in COD LIVER OIL
for milk-sensitive patients
Smaco HYPO-ALLERGIC MILK
for protein-free maltose and dextrins
ALERDEX
VOTE THIS TICKET
S. M. A. CORPORATION
CLEVELAND, OHIO