BULLETIN

of the

Mahoning County Medical Society

Organized 1872

"Save and teach all you are interested in to save; thus pave the way for moral and material success." — *Thomas Jefferson.*

September, 1936

Volume 6 Number 9

ΑΣΚΛΗΠΙΟΣ ΑΣΚΛΗΠΙΟΣ

INTESTINAL PUTREFACTION--
DIARRHEA
Promptly Relieved By

KARICIN

The adsorption, detoxification and elimination of irritating, toxic substances from the intestinal tract is quickly accomplished by the use of Karicin —a ricinoleated emulsion of colloidal kaolin with mineral oil.

A sample of the new palatable Karicin and descriptive literature will be mailed to any physician upon request.

JERRY TRAUB
Representing
THE WM. S. MERRELL COMPANY
CINCINNATI, OHIO, U. S. A.

THE MAHONING COUNTY MEDICAL SOCIETY BULLETIN

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Vol. VI, No. 9. September, 1936

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PRESIDENT'S PAGE

With the coming of fall, summer vacations ended, we square away for the final quarter of the year's medical and society work. We feel that it has not been such a bad year for most of us so far; let us all go into the final lap with such vigor and enthusiasm that it will end up as a very profitable year in things done, in ends attained, and in work accomplished. Let us all actively support, by our presence, the postgraduate course of lectures offered by our program committee. Likewise, let us all profit from, and enjoy, the remaining few regular monthly meetings.

We expect an even larger group than usual from here will attend the State Society Meeting in Cleveland October 7th, 8th, and 9th. Our delegates are carefully studying some proposals which they think may come before the House of Delegates at that time. Express your views upon problems affecting organized medicine to your local delegates that they may be influenced or guided thereby. Sessions of the House of Delegates are open to all duly registered physicians. Attend one or more sessions; get acquainted with some of the state officers—they will be glad to see you, to know you, and it will not detract from their interest and work in society affairs to see such evidence of your interest.

Two years ago your delegates from Mahoning County asked the House of Delegates to work with the Ohio Hospital Association in securing recompense to physicians and hospitals for services rendered indigent automobile accident cases. This the House of Delegates failed to do. The Hospital Association, however, went ahead and secured necessary legislation to provide payment to the hospitals. This year the hospitals will receive about $300,000.00 for care of such cases; this money being taken from funds paid in to the State in the form of automobile license fees—taking from such fees about 19c per car. We calculate that about an equal amount of money would be paid to the physicians for care rendered such cases if they were similarly paid. That amounts to about sixty dollars for each physician in the state of Ohio. Many of those who have complained of the cost of membership in the State Association would value their membership more highly perhaps if the above cited action by the House of Delegates were reversed. Tell your delegate what *you* think about it.

L. GEO. COE.

BULLETIN
of the
MAHONING COUNTY MEDICAL SOCIETY
SEPTEMBER 1936

MINIMUM STANDARD FOR PRENATAL CARE*

All pregnant women should be under medical supervision throughout the entire period of pregnancy. Every woman should be instructed to place herself under the care of a physician as soon as she suspects that she is pregnant.

I. History

Age and the number of years married are important. At the first visit, the physician should obtain the following minimum obstetrical history:

A. *Past History.*

1. Diseases—Question particularly as to the following: Rickets (backward in walking); scarlet fever; diphtheria; tuberculosis or exposure to tuberculosis; tonsillitis; rheumatism; heart disease; syphilis (stillbirths and miscarriages); other serious illnesses.
2. Surgical conditions and accidents, especially pelvic and abdominal operations.
3. Menstrual history—onset, frequency, duration, amount of flow, date of last menstruation; change after marriage.

B. *Previous Pregnancies.*

1. Date of termination.
2. Period of gestation.
3. Complications — Bleeding; headaches; edema; visual disturbances; albuminuria; elevated blood pressure; convulsions.

C. *Previous Labors.*

1. Spontaneous or induced.
2. Duration.
3. Character.
4. Termination — Spontaneous; artificial—operative procedure.
5. Complications.
6. Puerperium—Postpartum hemorrhage; puerperal infection—days in bed; other complications.

D. *Previous Children.*

1. Born alive or dead; weight at birth.
2. If dead, macerated—how long before birth did fetal movements cease.
3. Premature or full term.
4. Breast fed, how long.
5. Artificially fed.
6. Age and condition at present.
7. If dead, age and cause of death.

E. *Present Pregnancy.*

1. Date and character of last menstruation.
2. Date of quickening.

*Recommendations by the Hospital Obstetrical Society of Ohio.

3. Estimated date of confinement.
4. Complications — Nausea and vomiting; bleeding; headaches; edema; visual disturbances; elevation of blood pressure; albuminuria; shortness of breath.

II. Physical Examination

(To be made at the time of first visit)

A. *Pulse, temperature, respiration.*
B. *Blood pressure.*
C. *Weight.*
D. *Survey* of skin, nutrition, mouth, teeth, tonsils, thyroid, heart, lungs, breasts, extremities.
E. *Abdominal examination*—Palpation, auscultation, mensuration.
F. *Vaginal examination.**

(Early in pregnancy this must be done very gently in order that it may not be the cause of abortion).

No vaginal examination should be made during the last month without strict aseptic precautions. Usually rectal examination is satisfactory at that time, provided internal pelvic measurements have been taken. Note the following:

1. Signs of pregnancy.
2. Position of uterus.
3. Condition of cervix.
4. Size of uterus.
5. Presenting part.
6. Pelvic tumor.
7. In suspected venereal disease, make smears.

G. *Pelvic Measurements.*
1. Intercristal.
2. Interspinous.
3. External conjugate.
4. Diagonal conjugate (best measured six weeks before term. Never take this measurement early in pregnancy as it may cause an abortion).
5. Transverse diameter of the outlet.

H. *Urinalysis.*
1. Amount in 24 hours.
2. Specific gravity.
3. Albumin.
4. Sugar.
5. Casts.
6. Pus cells.

I. *Wassermann* in cases having history of stillbirths, miscarriages, syphilis (routine Wassermann is desirable).

III. Instructions to the Patient

(Printed or written instructions are recommended.)

A. *Discussion* of the following:
1. Diet.
2. Exercise, rest, sleep, and recreation.
3. Clothing, including shoes.
4. Baths and care of the skin.
5. Care of the bowels.
6. Care of the kidneys.
7. Care of the teeth.
8. Care of the breasts.
9. Coitus during pregnancy.
10. Hygiene of the home and preparation for home delivery.

B. *The patient should report* at once any of the following symptoms:
1. Constipation.
2. Shortness of breath.
3. Acute illnesses, colds, sore throat, persistent cough.
4. Persistent or recurring headache.
5. Persistent nausea and vomiting.
6. Visual disturbances.
7. Dizziness.
8. Pain in the epigastrium.
9. Edema, especially of the hands and face.
10. Diminution in the urinary output.
11. Severe pain in the lower abdomen.
12. Vaginal bleeding, no matter how slight.

IV. Return Visits

The patient should be examined by her physician at least once a month during the first six months, then every two weeks or oftener, as indicated, and preferably every week in the last month.

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*In the presence of vaginal bleeding at any period of gestation, rectal examination should be substituted for vaginal unless strict aseptic precautions are followed.

At each return visit, the following should be considered:

1. The patient's general condition.
2. Blood pressure.
3. Urinalysis.
4. Pulse.
5. Weight.
6. Abdominal examination, including auscultation of fetal heart, particularly in the latter months, in order that the growth of the child may be followed and abnormal presentations detected.

V. Disproportion

Within two weeks of the estimated date of confinement, lightening should take place in primigravidae. If, therefore, the head is not fixed in the pelvis of a woman who is pregnant for the first time, as term approaches, disproportion should be ruled out by careful pelvimetry and by manual efforts to determine the cephalo-pelvic relationship. If the practitioner is unable to do this work himself, he should seek the advice of a competent consultant.

Such patients, likewise, should not be examined vaginally except under the strictest aseptic precautions. When they go into labor, vaginal examinations should, if possible, be omitted until the presenting part reaches the level of the ischial spine.

VI. Vaginal Bleeding or Low Abdominal Pain

In case of vaginal bleeding or low, intermittent abdominal pain, the patient should go to bed at once and notify her physician.

Vaginal examinations should not be made except under aseptic precautions and after preparations for the control of hemorrhage have been made.

If the environment does not permit of an aseptic vaginal examination and the employment of such aseptic measures as are indicated to control hemorrhage, the patient should be removed to a hospital, and, preferably, to the one that is nearest her home. (A vaginal pack, unless properly introduced, usually does more harm than good.)

It is advised that all women who are pregnant for the first time be confined in a hospital, and that home deliveries be limited to multiparae.

HOSPITAL INSURANCE

There has come to our desks in the past week, an announcement of the formation of The Citizens Intelligence League, whose purpose it is to provide thirty days' hospitalization for its members, at a cost of $12.25 per year. Further reading of the prospectus says the organization is a non-profit community service, and by this ruse is attempting to avoid registration with the insurance commission of the State of Ohio.

So far as can be learned there is no paid-in capital and the promoters are endeavoring to obtain funds from the Community Corporation to start the venture.

Two statements, Nos. 3 and 4, under "What the Plan Provides," promise a 25 percent reduction on semi-private room charges if the patient overstays his contract time and 25 percent reduction on necessary x-ray and laboratory examinations while in the hospital. Conversation with the hospital superintendents reveals that this is an unauthorized statement so far as they are concerned, and can only mean that the League will reimburse the individual from its funds. This ambiguity should be made clear.

Hospitalization insurance is probably coming in some form, but it should be surrounded with all the safe guards common to other types of insurance, as provided for by the insurance laws of the state, and enforced by the insurance commission. The proposal of the Citizens Intelligence League is without this primary safeguard.

September Meeting

DR. RAYMOND C. McKAY, Cleveland, Ohio

Medical Director of the Division of Tuberculosis
Cleveland City Hospital

SUBJECT:

Collapse Treatment of Pulmonary Tuberculosis.

Dr. R. C. McKay, who addresses us this month, is a native of Youngstown, a Rayen classmate of Jack Lewis, and a Reserve classmate of "Windy" Bennett. Since 1926 he has been at the head of the Tuberculosis Division of Cleveland City Hospital. Dr. McKay comes to us with a wide practical knowledge of the problems of Tuberculosis and the modern methods of dealing with them.

Tuesday, September 15, 1936

8:30 P. M.

YOUNGSTOWN CLUB

SECRETARY'S REPORT

During the summer months, the activities of the county society are at a low ebb. But again, let this office remind you that the activities of the various committees are functioning and these committees are doing a year round job.

The Council has met regularly and carried on the routine business of the Society. The Public Relations Committee, August 24, 1936, reported to the Council the activities of an organization known as the Citizens Intelligence League, which is attempting to organize an insurance plan for the payment of hospital expenses in Mahoning County. The Council listened for several hours to the discussion of this plan as presented by a Mr. W. H. Lee, who is one of the incorporators of the Citizens Intelligence League.

To date, the Council has very little to give in regard to this organization as your committee has not finished its investigations.

The Medical Economics Committee reported progress in its work with regard to the treatment of venereals in Mahoning County. They also reported that a new contract had been signed with the County Commissioners of Mahoning County, raising the fees for the care of the indigent from one and two dollars to the minimum fee schedule of the Mahoning County Medical Society. And that the plan will care for all venereals who are on relief. A detailed report could not be given to the Council, but they gave assurance that all types of venereals will be treated, and that all persons will be treated, Relief, W. P. A. employees, and near indigent, such as the very low wage earner. They request that if you as a physician know of any venereal that is not receiving treatment, report he or she to the committee and some way will be provided for their treatment. They urge wholehearted coöperation.

The Council was informed by this committee that the State Health Director, Dr. Hartung, was heartily in favor and would coöperate to the fullest with the program that was outlined to him by this committee. He felt that the program as outlined was ideal, and that it would work. They urged that you read your State Journal with regard to the reporting of syphilitics, and that all cases whether private or indigent be reported.

Do not forget that September we swing into our fall program, and the attendance should be 100% at the beginning.

WM. M. SKIPP, M. D.,
Secretary Pro Tem.

GREEN LAURELS

The Lives and Achievements of the Great Naturalists — By Donald Culross Peattie.

This volume, recently come to our desk, is a delightful, well-written book with unusual appeal to physicians. Such characters as Swammerdam, Leeuwenhock, Buffon, Reaumor, Linnaeus, Larnarck, Audubon, Darwin, Fabre and others are portrayed in beautiful manner.

Reading of fungi, one comes across the following:

"You set out with a basket on a spring morning, looking for the delicious morelle, and where last year it succulently grew, it has withered away, its spores fallen in some unvisited wood, and in its place the shyest of the Aminitas, without the warning red label of its kind, rises pure, cold and translucent as the marble of your tombstone."

A book well worth reading.

H. E. PATRICK, M. D.

Coming Events

October 20th—DR. L. C. KRESS

Ass't. Director, New York State Institute for the Study of Malignant Disease—Buffalo, N. Y.

November 17th—DR. A. J. LANZA

of the Metropolitan Life Insurance Company—New York City

"Trends in Medicine"

LOCAL TALENT TO THE FORE

Drs. Elsaesser, Sedwitz, McNamara and Brant are scheduled for an extra meeting on October 27, 1936.

PROGRAM

DR. A. E. BRANT

"Do we treat our patients too much?"

DR. F. W. McNAMARA

"Non-penetrating trauma of the abdomen"

DR. S. H. SEDWITZ

"Diagnostic aids and treatment of peripheral-vascular diseases"

DR. ARMIN ELSAESSER

"Some aspects of Goitre Surgery"

Each paper will be of 15 minutes duration.

NEWS ITEMS

Dr. Sears had completed his postgraduate work at Chicago, and has resumed his association with Dr. McClenahan.

Dr. C. M. Askue has completed a postgraduate course in Medicine at Massachusetts General.

Dr. Sam Weaver had an unusual appointment during July, to enhance his training in neuro-surgery. He had the privilege of the neurological service at Massachusetts General Hospital during that month.

Clinical - Pathological conferences will be resumed at the South Side Unit on Friday, Sept. 18, 1936, at 11:30 A. M. The "public" are invited.

Dr. Sherbondy would be pleased to have any of the profession who so desire, call upon him at his residence on Fairgreen Avenue.

Dr. McNamara has just returned from 10 days of golf at Cambridge Springs.

Dr. H. W. Evans will leave soon for a tour of South America. While we know that "Hi" can rise to great heights when imploring the green cubes, we believe, that in the trip over the Andes from Valparaiso to the Argentine, he will probably outdo all preivous records. A safe landing, old boy! Keep us posted.

Dr. J. N. McCann is at the Harvard School of Medicine in Boston where he is taking a special two months' course in cardiology.

Mrs. E. Flynn announces the marriage of her daughter, Elinore, to Dr. J. J. Wasilko. Mrs. Wasilko is a member of the nursing staff of Saint Elizabeth's Hospital.

Dr. Samuel Tamarkin is back on the job after having his appendix removed.

Dr. J. B. Nelson is in Chicago where he is taking a month's course in Gynecology at the Cook County Hospital.

Dr. E. W. Cliffe, convalescing from his recent illness, took a month's vacation in the East. He did considerable motoring and enjoyed several weeks at a cottage on Lake Huron.

Dr. and Mrs. P. J. Mahar have returned from their honeymoon. They enjoyed a cruise on the Great Lakes.

Entertainment Committee

The Annual Golf day and Picnic of the Mahoning County Medical Society will be held at the Sqaw Creek Country Club, Thursday afternoon and evening, Sept. 24, 1936.

This will be the last social affair of the summer season.

Radio Talks

August 10, 1936—Dr. W. W. Ryall —Title, "Rabies."

August 17, 1936—Dr. C. A. Gustafson—Title, "The Family Medicine Chest."

August 24, 1936—Dr. R. E. Odom —Title, "The Tonsil Operation."

August 31, 1936—Dr. Oscar Axelson Title, "St. Vitus Dance."

POST-GRADUATE COURSE IN ENDOCRINOLOGY

By

DRS. ROY and E. PERRY McCULLAGH

Cleveland Clinic

A Course of Ten Lectures

For Members of the Medical Professions of Mahoning County and of Surrounding Counties.

Beginning Wednesday evening, September 23rd, 1936, and each succeeding Wednesday evening.

Place: AUDITORIUM FIRST CHRISTIAN CHURCH

Wick Avenue and Spring St.

Time: 8:30 P. M.

PROGRAM

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.

COST: Will depend upon the number subscribing; probably between $2 and $3.

REVIEW OF DIAGNOSTIC METHODS AND THE TREATMENT OF PERIPHERAL VASCULAR DISEASES

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

(*Continued from August issue*)

The layers which overlie the endothelium are indistinct but apparently consist of a muscular coat with many outer shallower layers. Numerous nonmedulated nerve fibrils lie in the collagenous outer zone. The collecting veins into which these vessels drain are characterized by a thin wall almost devoid of muscular cells. These veins surround the arterial vessels in the form of plexuses. The primary collecting vein opens into the subpapillary vein. The entire unit, called glomus, consists of an afferant artery, the arteries of the venous anastomosis (Sucquet-Hoyer canal), the neuro-reticular and vascular structures around the canal, the outer collagenous tissue, and the primary collecting vein. Capillaries are richly supplied to the collagenous area and surround the canal. These arise from the pre-glomic arterioles given off from the afferant artery and finally into the limbs of small plexus veins surrounding the anastomosis and primary collecting veins. Beyond the glomus the arteries divides in the subpapillary layer into arterials and capillaries of the stratum capillaire.

The function of the glomus is regulation of heat locally as well as regulation of body temperature as a whole. (Popoff). With exposure of the hand to cold, the blood is diverted from capillaries through the anastomosis into the collecting vein with the higher developed surface area thus maintaing a constant local temperature. When the glomus system is fully opened as a result of general reaction for the dispersion of heat, there is an enormous flow of blood that may take place through the digits allowing for the rapid loss of heat, which is regulated by the very slow flow through the capillaries. The glomus can also relieve the peripheral arterial system if the pressure within becomes very high by shunting blood across to the deep veins. In a like manner capillary stasis can be relieved. In man these anastomoses are controlled by vasomotor nerves.

Popoff further shows that digital glomi are formed only after birth and in the aged undergo atrophy. As a result of pathological destruction a new canal can develop from one of the pre-glomic arterioles.

In cases of arteriosclerotic gangrene and diabetic gangrene difficulties present themselves. In the first, hyaline degeneration of the afferant artery exists and in the second the Sucquet Hoyer canal and the pre-glomic artery are involved.

In thrombo-angiitis obliterans there are no primary thrombotic or inflammatory reactions. A new idea as to the pathogenesis is the discovery of many newly developed anastomosis between the arteries and veins and between the veins themselves. These anastomoses are pathological and differ entirely from the normal glomus. They are purposeless and detrimental to circulation.

The Nerve Supply of the Blood Vessels

The autonomic nervous system consists of a long chain of ganglionated nerve cords extending vertically through abdomen, thorax and neck; the thoraco-lumbar or sympathetic portion. Preganglionic fibers arise from nuclei in the grey matter of the cord and travel through ventral roots, turn either up or down and run varying distances before terminating in synaptic relationship with nerve cells of the sympathetic ganglions. From

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this point the postganglionic fiber emerges from the sympathetic ganglion through the grey rami communicantes to the spinal nerves through which the postganglion fibers then travel to supply the blood vessels, secretory activity of sweat glands and pilomotor function of the hair follicles.

There are vasodilator and vasoconstrictor fibers whose functions are as follows: the constrictor fibers maintain normal tonus of vessels. They direct constant fluctuating by response to changes in temperature, emotion and internal production of heat. The greatest effect is to maintain and disperse heat.

Lewis and Pickering show that lightly clad persons exposed to environmental temperature of 16-18 degrees centigrade get a constriction of vessels of hands and feet. An increase to higher levels results in a release of increased surface temperature. Vasodilation is accomplished in part by direct effect on the vessels of the skin and by the effect of warm blood on the central temperature regulating mechanism which results in a vasodilation by action through the central nervous system. If the body is warm and the hands are exposed to 14-16 degrees centigrade, vasodilation takes place in the hands. The finger tips warm first then the base of the fingers and finally the hand. Cooling occurs in the same sequence. Response of dilation occurs earlier in fingers than in toes. This is not due to difference in vascular tone but difference in the intensity of vasomotor relaxation in the upper and lower extremities.

Sir Thomas Lewis has shown that normal vascular reaction to cold is vasodilation preceded by constriction. It is an axon reflex of the sensory nerve activated by the release of the "H" substance of the skin. The function there is the protection from injury. This occurs when the fingers are exposed to cold and the body is warm. At first the temperature of fingers falls to that of the environment followed by a rise. The more quickly the fall occurs the more rapidly the vasodilation occurs. The fingers are painful while temperature is low and rapidly become comfortable as reaction sets in. This reaction fails to occur if the body is not comfortably warm. If large surfaces are cooled the general vasomotor tone is increased and local active hyperemia cannot occur. If the entire body is exposed the blood vessels of the skin are constricted.

Pickering and Frank show that cooling of one hand when the other is immersed in ice is a vasomotor reflex from the skin by the stimulus of cold. The whole surface of the skin reacts like this. This is a dual mechanism (Pickering). Direct stimulus gives immediate reflex action by a cutaneous vasoconstriction, but the mechanism is a result of the cool blood from the cold part of the body effecting the temperature controlling mechanism through which general vasoconstriction occurs (Pickering). Heat does about the same but is only a single mechanism. The warm blood effects the temperature regulating mechanism, not the temperature center and we get a dilatation due to increased elimination of heat from body surfaces. Local heat effects the blood vessels of the part by direct action on walls of the vessels which respond by dilatation and the warm blood effects the temperature regulation mechanism. The direct release of constriction tone occurs above normal tone if the skin is effected by the "H" substance.

Maddock and Coller have shown by their studies that the surface of the skin dissipates 76% of the total heat produced by conduction, convexion and radiation. 24% is eliminated by vaporization of water from the surface and by the lungs, at normal environmental temperature. Increased environmental temperature or with hard labor enough heat can be

eliminated and vaporization is increased and accounts for all heat lost. Temperature of the skin is due to the heat brought by the blood supply and heat lost by surface. The cool skin has areas 3-5 cm. deep where temperature is less than the blood. The surface temperature of extremities can increase more than head and trunk. Toe heat is used as a unit of surface area. The extremities show the greater vasoconstrictor tone because normally they take the greater part in the conservation and elimination of heat. They are well adapted to do this because they do not contain any vital organs. The extremities supply 65% of the total body surface and are thrust out into the environment to make heat dissipation effective.

Diagnostic Methods

Again to reiterate, early diagnosis is of extreme importance. This is especially stressed by all workers in this field. It is by obtaining the potential cases that prophylactic measures can be instituted and best results obtained. Doing this, innumerable cases of sciatica, neuritis, myositis, fallen arches, and rheumatoid conditions are cleared up by instigation of proper methods of therapy. General careful examination of the entire body is essential especially as to the cardiac function, metabolic and infectious diseases of central nervous system, and the peripheral nervous system.

The Raynaud's syndrome can be a manifestation of other diseases such as scleroderma, rheumatoid arthritis; acrocyanosis being always secondary. This is often mistaken for static orthopedic disease.

Obliterative disease can be part of a generalized condition involving peripheral vessels and the cardiac system and have simultaneous manifestations. Hypertensives may have peripheral accidents, and likewise thrombo-angiitis obliterans may have general vascular conditions involving all viscera. Surface anemia may produce a pallor of the extremities and also intermittent claudication and may look like obstructive diseases. Policythemia may produce thrombosis and a vasodilatation picture.

Abnormalities of appearance, such as gangrene, resulting from interruption of blood flow, also indolent ulceration showing impairment of blood supply due to spasmotic or organic infection, here color changes may exist in normal depth or tint.

In the absence of anemia, pallor means that the superficial veins are empty. This only means the blood is massaged out by muscular activity and the inflow is impaired and constriction is due to organic or spastic disease. Pallor occurring when the limb is elevated above the level of the heart suggests structural impairment. The blood fails to enter from the arteries when drained into the venous circulation and rapid cyanosis occurs when the limb is lowered. This means much more. Persistent pallor means Raynaud's disease. When superficial veins are not constricted color is dependent on the back flow in the capillaries. Pallid skin is cold as the color is dependent upon impaired arterial flow.

Rubor may be due to dilatation of the capillaries and small veins of skin as a result of local injury by impaired blood supply, by continued cold, low grade or chronic infection, ultra violet irradiation, or mechanical injury. Lewis points out that redness of skin does not indicate an increased blood supply, because mere dilatation of the capillaries of surface, even with considerable impairment of inflow may give redness. In this case it is always associated with decrease of skin temperature. Redness with normal increase of surface temperature is compatible with normal or increased circulation.

Local cyanosis due to local slowing of blood stream is relative to the oxygen requirements of the skin. In a cold skin cyanosis may occur as a

result of spastic constriction of the arterioles yet capable of dilating. In these cases as the limb is warmed the vessels are assumed to be dilated. Cyanosis here is strong presumptive evidence of structural disease above.

Postural changes in color are common with organic disease of the arteries. Deepening cyanosis of the skin with the limb dependent is due to stasis of toneless superficial vessels with filling consequent on static increase on venous pressure.

Palpation of the Vessels

It is possible to have circulation in larger vessels when the distal ones are occluded. Circulation may be normal with absence of pulsations as in coarctation of the aorta or impaired cardiac function. In extreme senile arteriosclerosis pulsations may be weak or absent, but circulation may be sufficient. Temperature here is important. Cold gives feeble pulsations. Failure in pulsations when warmth is supplied is sure evidence of structural disease. Reich shows abnormalities, and Buerger shows absence of pulsations in about ½% of patients normally. Edema and adiposity of tendons and ligaments affect the pulsation. Reich shows the dorsalis pedes is absent in about 4% of patients, posterior tibialis 5% and dorsalis pedes in 8% is in different positions. Visable pulsations on warming shows intact circulation. Obstructing the veins by means of 60-70 mm. mercury shows the condition of the circulation. Allens uses the test of constricting the radial and ulnar arteries at the wrist and observing return of circulation on the release of constriction.

Ischemia—Intermittent claudication without anemia is indicative of structural disease. Various tests devised by Lewis, Pickering, Simons and Landis which depend upon exercise of extremities, aid us in diagnosis.

Circulation of legs in healthy persons is interrupted at the ankle joint and repeatedly and fully extended against resistance at the rate of one complete movement a second. Pain appears in the muscles of the calf if the ankle is flexed. Against extension pain appears in the anterior tibial muscles. Pain appears in 20-30 seconds and disappears in 5 seconds after the circulation is released. In patients this is done without constrictions of circulation and there it is done with constriction in an interval of 15 minutes. Landis uses this with galvanic stimulation of the muscles and graphic demonstration on a drum to show this reaction. We employ the use of the Simons claudicometer and the use of the metronome so that the patient flexes his ankle every second. One hundred and fifty constrictions without production of pain or fatigue by motion is normal.

Samuels employes the plantar ischemia. The patient lies recumbent, legs vertical and feet flexed and they are extended at the ankle. Pain and fatigue is produced plus pallor of plantar surface. This is absolutely important if one sided.

Reactive hyperemia, Pickering test, Collens test, and the Wright and Spier test—In the Pickering test the vessels must be empty and the limbs completely warm. The blood pressure cuff is tightened above the systolic pressure for 4½ minutes and in ½ minute is released. A flush appears normally in the digits in 5 seconds. In Raynaud's and acrocyanosis it occurs in less than 5 seconds. The maximum brightness occurs in not less than 15 seconds and fades quickly. Pathologically the flush spreads slowly, is patchy and mottled and delayed to the tips of the digits one minute or more, the cyanotic tint lasts for a minute or more.

The Collens test described before is not really a hyperemia test, but it is observed preliminary to doing the other tests.

The Wright's-Spier test is not one of reactive hyperemia but is dependent upon the action of magnesium and

calcium on the parasympathetic nervous system. This consists of the injection in the cubital veins of arm of 2 ccm. solution of magnesium and calcium and noting the time in seconds of the appearance of a warm feeling occurring in the peripheral arterial system at various sites. The normal has been studied in three hundred patients as was the abnormal. The feeling of warmth by the patient, first in the throat and vessels of neck, spreads down the hands, systematic circulation and lower extremities. Figuring that one cycle of blood occurs in 20 seconds, one can readily tell impairment of circulation when the sensation of warmth is expressed by the patient as being present or delayed.

Surface temperature—This is very important. The temperature of the parts of the body is due to heat brought by the blood and radiation from the surface. When the mechanism of temperature control is inadequate, shivering occurs. Environment, body temperature, rate of metabolism and emotional reactions vary vasomotor changes. For this reason observations after sympathectomy are not reliable because the loss of function of sweat glands does not allow loss of heat by evaporation.

Coolness alone is not enough for diagnosis but inequality of the two extremities is very important. Unilateral coldness indicates structural disease. Likewise, sudden decrease of temperature from the proximal to distal extremities is evidence of structural disease. It is essential that one has proper control of surrounding temperature to obtain a rough idea of the difference of temperature in extremities. The electric thermacouple is the best means of testing. But there will be available shortly a surface mercury thermometer allowing for the application of mercury at the longitudinal diameter of the tube in counter distinction to the tip of the tube where pressure effects the rise in the column of mercury. Heat radiation is prevented by the presence of a bakelite tip covering the bulb of mercury.

Oscillometry—By this means knowledge of the larger and deeper arteries is obtained. One can readily demonstrate the site of the lesion. Hystamine can be used also in conjunction as it shows the condition of the arterioles. The two used in conjunction gives one a good picture of the condition of the arterial supply. Arteriography with the use of thorotrast has not received much favor because the drug is radioactive and its presence is demonstrated in the liver for a long time, showing slow elimination. Furthermore, it does not supply any added information that cannot be obtained by oscillometric and histamine readings to warrant the danger of its use.

Release of vascular tone—This is used to determine the difference of spastic and organic diseases. It also indicated the possible success of sympathetic ganglionectomy.

Peripheral vascular dilatation is obtained first by increased internal production of heat; second by increasing environmental temperature locally or generally; and third by the temporary interruption of the vasoconstrictor fibers through the sympathetic nervous system.

Brown uses typhoid vaccine but this use is hazardous in ambulant arteriosclerotics and debilitated patients.

Morton and Scott first interrupt the sympathetic nervous system by spinal anesthesia and obtained a rise in surface temperature. The same results are obtained by general anesthesia. The result is an inhibition of vaso-constrictor fibers. Lewis, Landis and White, Morton and Scott have employed the peripheral nerve block. They block the posterior tibial nerve behind the internal malleolus of the ankle, also the ulnar nerve at the elbow or median nerve at the wrist. There must be a constant room tem-

perature of 20 degrees Centigrade.

Scott and Morton classify their findings from these tests as — one, occlusion alone; two, spasm; three, mixed factors.

Arteriography — This only shows the degree of calcification. The danger involved does not warrant the routine use, although several clinics have employed it without any deleterious effects in three years. Its use is warranted in arterovenous aneurysm and also where amputation is considered. The thorium employed is retained in the reticulo-endothelial system which is the factor that produces concern.

Treatment

Chiefly to be stressed is the prophylactic treatment following the early diagnosis of peripheral vascular embarrassment. The prophylaxis consists not only of early recognition but of taking measures before treatment is instituted too late to prevent local mortality.

As a rule a patient comes to us usually a middle-aged wage earner, with an occupation demanding more or less physical exertion, complaining of vague symptoms such as, claudication, numbness, tingling, coldness and rest pains; studies are made to ascertain the condition of the peripheral circulation. I trust the means described and aids to diagnosis mentioned will enable anyone to recognize circulation embarrassment sufficiently to prompt instigation of treatment and relief of obstruction to peripheral circulation.

There is no routine treatment in these cases, as each case demands individual care depending upon the causative factor. In our clinical service we have employed every available method to bring about results.

In all cases where there is demonstrable evidence of peripheral vascular embarrassment patients are given general instructions for the care of feet as follows:

General Directions for Home Care of the Feet

1. Wash feet each night with neutral (face) soap and warm water.

2. Dry feet with a clean soft rag without rubbing the skin.

3. Apply rubbing alcohol (70%) and allow the feet to dry thoroughly, then apply a liberal amount of vaseline or toilet lanolin and gently massage the skin of the feet.

4. Always keep your feet warm. Use woolen socks or wool-lined shoes in the winter and white cotton socks in warm weather.

5. Use loose fitting bed-socks instead of hot-water bottles, electric heaters or any other form of mechanical heating devices.

6. Wear properly fitting shoes and be particularly careful that they are not too tight. Use shoes made of soft leather and without box-toes.

7. Cut your toe-nails only in very good light and only after your feet have been cleansed thoroughly. Cut the toe-nails straight across.

8. Do not cut your corns or callouses.

9. Do not wear circular garters.

10. Do not sit with your legs crossed.

11. Do not use strong antiseptic drugs on your feet. Particularly never use Tincture of Iodine, Lysol, Cresol or Carbolic acid.

12. Go to your doctor at the first signs of a blister, infection of the toes, in-growing toe-nail or trouble with bunions, corns or callouses.

13. Drink at least four quarts of water each day.

14. Eat plenty of green vegetables and fruit in an otherwise well-balanced, liberal diet, unless you have been ordered to follow some special diet.

15. Do not use tobacco in any form.

16. Have some member of your family examine your feet at least once each week.

17. Carry out the exercises prescribed by your doctor exactly as you were taught to do them in the clinic. Do them regularly and faithfully.

18. Attend clinic for Pavaex treatments.

Exercises prescribed are Buerger-Allen exercises. In addition there is given 100 hours or so of Pavaex and Collens-Wilensky treatments.

Where a definite local lesion exists, such as ulceration and gangrene the patients are hospitalized, until such time as the local condition is absolutely controlled and remedied by surgery or otherwise, the pain relieved, and the patient able to be about on crutches. Here one must change the treatment according to diagnosis and the condition that presents itself.

In thrombo-angiitis obliterans or Buerger's disease with acute symptoms consisting of claudication, regardless of whether there is present color changes or gangrene, the patient is hospitalized.

All tobacco and the use of rye bread is denied. If there are marked spastic symptoms present, accompanied by pain and ischemia, papaverine in ¼ grain doses is given intravenously every 4-6 hours prn. Patient is placed in bed with legs elevated at optimum height above the heart and under a cradle insulated with sufficient blankets to allow for the production of heat by convection. This is produced by a thermostatically controlled carbon lamp with temperature level of 94° F.

He is given fluids to the extent of one gallon per day, the intake being restricted towards evening hours. Hypertonic saline is given as tolerated starting at 150 cc. of 2% solution every other day and gradually increased to 300 cc. of 5% saline. On alternate days typhoid intravenously according to the method of Wright, is also given.

Pavaex treatments are instituted for as many hours a day as can be tolerated by the patient at various intervals during the day. The Collens-Wilensky treatment is applied at all times in conjunction with the heat by convection. The cuff is applied to mid thigh and kept on all night if necessary. As soon as there is alleviation of symptoms the patient is allowed up with crutches and discharged from the hospital and returns for treatment each day until relief of symptoms justifies reduction to a few hours two or three times a week.

During the hospital stay any local condition such as ulceration and gangrene is treated surgically. If there is infection this is best controlled in our opinion by use of Azochloramid (N - N' - Dichlorodicarbonamidine in oil). If granulation persists at the site of the lesions and there is no indication of epithelization, grafting is done.

Pavaex treatment in these cases that have local mortality existing, has not proved very satisfactory in itself, therefore, all the other treatments have been used in conjunction with it. There have been instances where patients have complained of increased pain while in the Pavaex but readily submitted to the Collens-Wilensky treatment for a period of 10-12 hours, sleeping while taking treatment. In fact, invariably they prefer the latter to the Pavaex.

In ulceration and the presence of marked spasm much relief has been shown by the use of mecholyl by iontophoresis to the entire lower extremity excepting the open lesion. Patients claim there is relief from pain, and the feeling of relaxation with the presence of "goose flesh" sweating, and warmth of the parts treated persisting from 2-14 hours.

In the treatment of arteriosclerosis obliterans there are many problems presented. Primarily the following general conditions demand first attention.

The early cases coming in with vague symptoms generally having been treated for fallen arches, varicose veins, rheumatism, sciatica, etc., are put through a complete study to rule out the possibility of the existence of these conditions. Herein the use of the oscillometer, hystamine test, Collens test, Samuels test, Simons test and surface temperature readings are very valuable.

Patients may only present the objective symptom of edema and subjective symptoms consisting of numbness, tingling, coldness and rest pains.

These patients quickly respond to the régime of treatment consisting of the restriction of tobacco (where the spastic factor of arterial spasm is present), increase of fluid intake during the day, Buerger-Allen exercises and the use of Pavaex two-three hours a day supplemented by the use of the Collens-Wilensky cuff. In these conditions we likewise give, where there is present any indication of hypertension, tablets of calcium orthoiodoxybenzoate (OxO-ateB.) four times a day and sodium thiosulphate with sodium iodide intravenously in 20 cc. ampules, each containing 47.5 grains of sodium thiosulphate and 2.5 grains of sodium iodide, every two-four days. At rest the leg is placed under the vasculator for heat by convexion. As soon as oscillometric readings show an increase in circulation, the patient is allowed to go home continuing all treatments and returning to the hospital for Pavaex and Collens treatment. This may take 50-150 hours of combined treatment following which there is a clinical improvement which is expressed by the patients themselves.

In the cases of thrombo-angiitis obliterans accompanied by evidences of local damage such as beginning gangrene of toes or feet the treatment is pushed to the greatest extent depending upon the tolerance of patient's general condition.

If the pain is severe section of the peripheral sensory nerves is done under local anesthesia. This relieves the pain, allows more rest and the patient's general condition becomes better because they can tolerate the treatment far better and longer.

The gangrenous parts are kept sterile with N-N'-Dichloroazodicarbonamidine in oil. When these parts become dry and definitely demarcated, they are resected. After nerve section this can be done right in bed without anesthesia. In other cases they are given gas or spinal anesthesia, and the parts resected. The extensor and flexor tendons are sewed over the exposed parts of the toe and no attempt made to close the skin. Routine treatment is still continued and finally after a few days there appears a seepage of blood while under the Pavaex treatment. This announces the beginning of granulation.

In arteriosclerosis obliterans complicated with diabetes there are presented many disheartening and trying problems. First, not only the diabetes but the presence of gangrene plus infection; second, secondary complications present themselves such as bed sores and the long illness produces an irritable and non-coöperative patient. It is in these cases that any treatment instigated has given the poorest results. Infection in these cases plays such havoc because of the fertile field supplied locally by the sugar saturated tissues and the decrease of the resistance of the patient as a whole. It seems that these patients are older than the years they claim and as old as the arteries they demonstrate. Often times it has been observed on amputation that the arteries at the site of resection show clay pipe-like walls even in patients of 40-50 years of age.

Of course, in these cases rigid care as to thorough control of the diabetes is immediately instigated. It has been noticed that cases of local mortality that have a slight glycosuria seem to do better than when entirely sugar-free. Daily examination for the pres-

ence of bed-sores is made. The care of any abrasions to the skin is very essential. The avoidance of the use of adhesive plaster and strong chemicals such as, iodine and phenol is especially observed in these cases.

In any case of diabetes where there is a complaint of cramps in the legs, rest pain, coldness, numbness and prickling sensations, a full study is made and early vigorous treatment is instituted.

Where local lesions exist these are primarily protected with dressings of N-N'-Dichloroazodicarbonamidine and the general treatment is outlined as in arteriosclerosis obliterans.

It has been observed in these cases that the use of the barbiturates in the alleviation of pain and production of sleep seems to react peculiarly in that it produces symptoms of confusion bordering into extreme excitement stages.

In these cases, as well as in the cases of arteriosclerotic obliterans, spiritus frumenti is given before treatments for vasodilating effects.

In the boots of a Pavaex apparatus the base of which has been painted black there is placed a Valverdi thermostatic carbon lamp yielding a heat from 94-96 degrees F. This temperature is maintained throughout the treatment. It corresponds to the same degree of temperature delivered by the vasculator while at rest.

The Pavaex and Collens apparatuses have not been described here for lack of space. The list of literature appended will thoroughly cover these topics as well as more fully discuss all subjects mentioned.

In conclusion may it be reiterated that—

1. As in the treatment of every other disease prophylactic measures come first in the treatment of P.V.D. This demands early recognition of circulatory embarrassment, which demonstrates itself by vague symptoms for which the patient seeks aid and is treated for conditions that are not related to circulatory disturbances. The failure of early recognition of P. V. D. delays the proper treatment and so increases the morbidity.

2. Proper diagnosis of P. V. D. requires the knowledge and use of the diagnostic measures outlined above.

3. Treatment is not routine but demands individual care. Treatment should always be conservative. Medical measures used if possible, then surgical to remove local mortality and relieve pain. No one method of treatment suffices. Combinations of various treatment advocated by various authors bring best results.

1. Scupham, G. W. and DeTakats, G.—Peripheral Vascular Diseases. A review of some recent literature with critical review of surgical treatment. *Arch. Int. Med.*, 56:530-622 (Sept.) 1935.
2. Jos. Kovacs, Leslie L. Saylor, Irving S. Wright—The Pharmacological and Therapeutic Effects of Certain Choline Compounds. *Amer. Heart Journal*, 11:1:53 (Jan.) 1936.
3. Mont R. Reid—Diagnosis and Treatment of Peripheral Vascular Diseases. *Amer. Journal of Surg.*, xxiv:1:11-35 (Apr.) 1934.
4. Collens, Wm. S. and Wilensky, N. D.—The Use of Intermittent Venous Compression in the Treatment of Peripheral Vascular Diseases. *Amer. Heart Jour.*, 11:6:705-721 (June) 1936.
5. Diagnosis and Treatment of Diseases of Peripheral Arteries—Saul S. Samuels—Oxford University Press, 1936.
6. Passive Vascular Exercises—L. G. Herrmann—J. B. Lippincott Co., 1936.

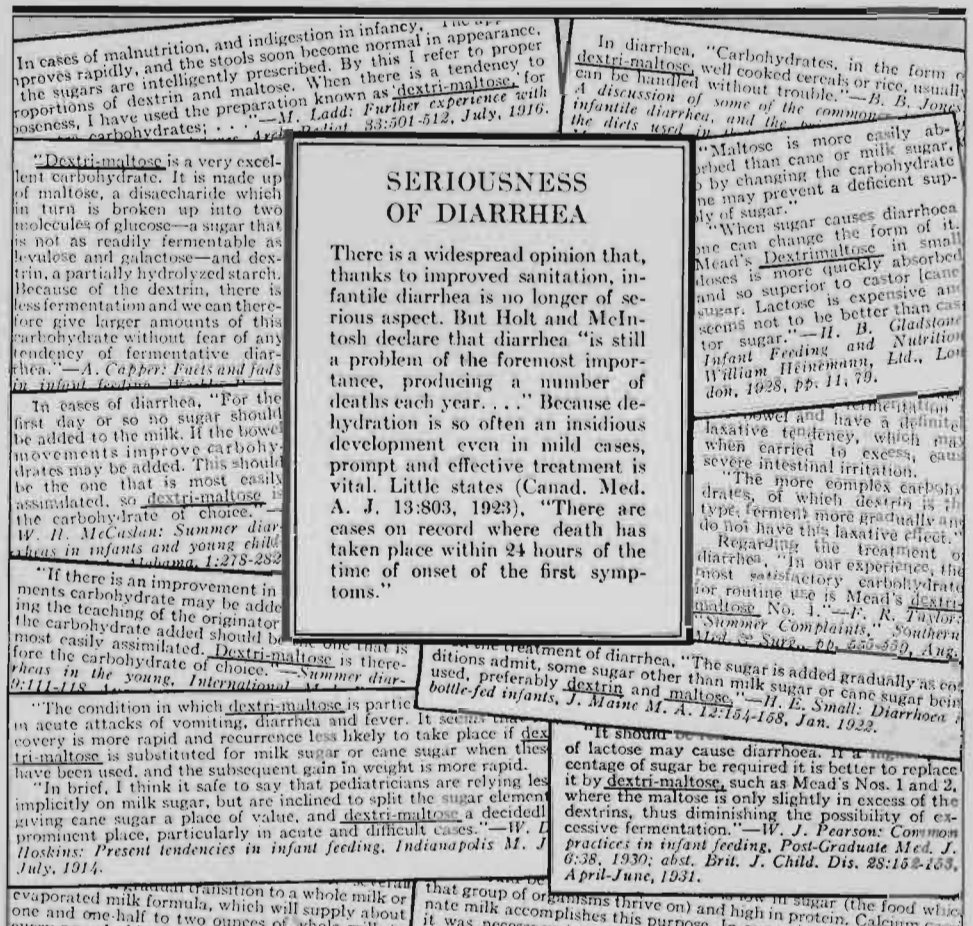
THE YOUNGSTOWN PRINTING CO.

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.


In cases of malnutrition, and indigestion in infancy, ... improves rapidly, and the stools soon become normal in appearance, ... the sugars are intelligently prescribed. By this I refer to proper ... proportions of dextrin and maltose. When there is a tendency to ... loseness, I have used the preparation known as dextri-maltose, ... carbohydrates; ...
—M. Ladd: Further experience with ... Pediat. 33:501-512, July, 1916.
In diarrhea, "Carbohydrates, in the form of dextri-maltose, well cooked cereals or rice, usually can be handled without trouble."—B. B. Jones: A discussion of some of the common ... infantile diarrhea, and the ... the diets used in ...
"Dextri-maltose is a very excellent carbohydrate. It is made up of maltose, a disaccharide which in turn is broken up into two molecules of glucose—a sugar that is not as readily fermentable as levulose and galactose—and dextrin, a partially hydrolyzed starch. Because of the dextrin, there is less fermentation and we can therefore give larger amounts of this carbohydrate without fear of any tendency of fermentative diarrhea."—A. Capper: Facts and fads in infant feeding. Weekly ...
"Maltose is more easily absorbed than cane or milk sugar, ... by changing the carbohydrate ... we may prevent a deficient supply of sugar."
"When sugar causes diarrhoea ... one can change the form of it. Mead's Dextrimaltose in small doses is more quickly absorbed and so superior to castor [cane] sugar. Lactose is expensive and seems not to be better than cane sugar."—H. B. Gladstone: Infant Feeding and Nutrition. William Heinemann, Ltd., London, 1928, pp. 11, 79.
In cases of diarrhea, "For the first day or so no sugar should be added to the milk. If the bowel movements improve carbohydrates may be added. This should be the one that is most easily assimilated, so dextri-maltose is the carbohydrate of choice."—W. H. McCaslan: Summer diarrheas in infants and young children. Alabama, 1:278-282, ...
... bowel and have a definite laxative tendency, which may, when carried to excess, cause severe intestinal irritation.
"The more complex carbohydrates, of which dextrin is the type, ferment more gradually and do not have this laxative effect."
Regarding the treatment of diarrhea, "In our experience, the most satisfactory carbohydrate for routine use is Mead's dextri-maltose No. 1."—F. R. Taylor: Summer Complaints. Southern Med. & Surg., pp. 535-539, Aug., ...
"If there is an improvement in ... ments carbohydrate may be added ... ing the teaching of the originator ... the carbohydrate added should be ... most easily assimilated. Dextri-maltose is therefore the carbohydrate of choice."—Summer diarrheas in the young. International ... 9:111-118, ...
... one that is ...
... one treatment of diarrhea, "The sugar is added gradually as conditions admit, some sugar other than milk sugar or cane sugar being used, preferably dextrin and maltose."—H. E. Small: Diarrhoea in bottle-fed infants. J. Maine M. A. 12:154-158, Jan. 1922.
"The condition in which dextri-maltose is particularly ... in acute attacks of vomiting, diarrhea and fever. It seems that ... covery is more rapid and recurrence less likely to take place if dextri-maltose is substituted for milk sugar or cane sugar when these have been used, and the subsequent gain in weight is more rapid.
"In brief, I think it safe to say that pediatricians are relying less implicitly on milk sugar, but are inclined to split the sugar element ... giving cane sugar a place of value, and dextri-maltose a decidedly prominent place, particularly in acute and difficult cases."—W. D. Hoskins: Present tendencies in infant feeding. Indianapolis M. J. July, 1914.
"It should be ... of lactose may cause diarrhoea. If a ... centage of sugar be required it is better to replace it by dextri-maltose, such as Mead's Nos. 1 and 2, where the maltose is only slightly in excess of the dextrins, thus diminishing the possibility of excessive fermentation."—W. J. Pearson: Common practices in infant feeding. Post-Graduate Med. J. 6:38, 1930; abst. Brit. J. Child. Dis. 28:152-153, April-June, 1931.
... gradual transition to a whole milk or evaporated milk formula, which will supply about one and one-half to two ounces of whole milk to every pound of body weight, is reached. This also should finally have the addition of dextri-maltose amounting to five to seven per cent."—R. A. Strong: Summer diarrheas in infancy and early childhood. Arch. Pediat. ...
... that group of organisms thrive on) and high in protein. Calcium caseinate milk accomplishes this purpose. In our series of cases, we found it was necessary to use the casein calcium for from 5-8 days; we then stopped it and added dextri-maltose to the formula."—A. G. DeSanctis and L. V. Paider: The value of calcium caseinate milk in fermentative diarrhea. Arch. Pediat. 38:233-236, April, 1921.

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.

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