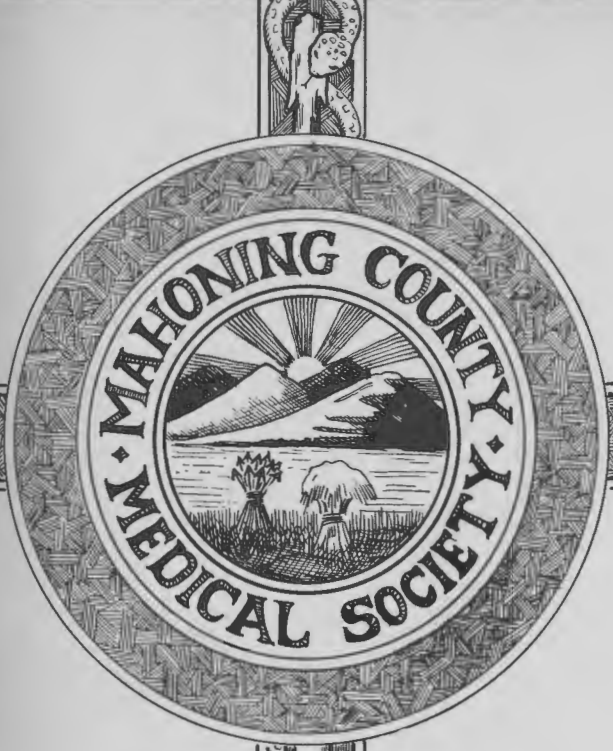

"Facts are to the mind as food is to the body."
—EDMUND BURKE.

BULLETIN

of the

Mahoning County Medical Society

Vol. IX No. 9
September 1939

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September, 1939

ADVERTISERS' LIST

Patronize them—they make the "Bulletin" possible

This publication is printed by the Youngstown Printing Co.

BULLETIN of the . . . .
Mahoning County Medical Society
SEPTEMBER 1939

Published monthly at
787 Wick Avenue, Youngstown, Ohio.

Annual Subscription, $2.00.

MEDICAL CALENDAR

September 14—Corn Roast and Clam Bake, Bert Millikin's Farm.

September 19—Speaker, Dr. Walter M. Simpson, Artificial Fever Therapy. Youngstown Club, 8:30 P. M.

October 17—Speaker, Dr. Louis H. Newburg, Metabolism, Youngstown Club, 8:30 P. M.

October 21—Second Annual Dinner Dance.

November 21—Speaker, Dr. Jerome Selinger, Peptic Ulcer, Youngstown Club, 8:30 P. M.

December 19—Annual Business Meeting, Youngstown Club.

MEDICAL TALKS OVER WKBN FOR SEPTEMBER

Sept. 15—Family Doctor - - - - - - - - - - - Dr. M. I. Berkson

Sept. 22—Overweight - - - - - - - - - - - Dr. D. M. Rothrock

Sept. 29—Appendicitis Facts - - - - - - - Dr. D. E. Montgomery

A Modern Institution for the Care of Nervous and Mental Patients

Alcohol and Drug Addiction

A majority of the patients are referred to Fair Oaks Villa by members of the medical profession and it is only through the journals of the profession that any publicity is sought. The interests of FAIR OAKS VILLA, as an Institution, are completely dominated by those who have high regard and respect for the tenets of professional ethics.

The homelike atmosphere of Fair Oaks Villa is afforded by the pleasant rooms, by the eight and one-half acres of attractive lawns, picturesque landscaping and restful surroundings.

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Fair Oaks Sanitarium is a member of the American Hospital Association and the Central Neuropsychiatric Hospital Association.

September

PRESIDENT'S PAGE

Our Scientific Program resumes this month with Dr. Walter M. Simpson of Dayton as guest speaker. The business of your Society has been proceeding despite the vacation period.

As we hoped it would be, the Golf-Picnic at Southern Hills in July was a very enjoyable outing. We are now looking forward to the Annual Corn Roast on September 14th. There is nothing so beneficial to the successful growth of our Society as these gatherings. No matter what we think of a man at work, to meet him socially affords an opportunity to glimpse the real man underneath the professional veneer.

Most of the members of our Society take Thursday afternoons off. This throws us into discord with neighboring medical groups. The following groups take Wednesdays off: Canton (Stark County), Akron (Summit County), Pittsburgh (Allegheny County), Cleveland (Cuyahoga County), Sharon (Mercer County), New Castle (Lawrence County), Warren-Niles (Trumbull County), East Liverpool-Salem (Columbiana County), Kent-Ravenna (Portage County).

Many of their Postgraduate functions are held on Wednesday during the winter, and their social gatherings on that day during the summer. The thought is, shouldn't we, as a Society, also agree on Wednesday in order that our membership could avail themselves of the opportunity to attend these out-of-town meetings and gatherings? Our failure to attend more of these than we do was very pertinently referred to by Dr. McCormick in the June, 1938, issue of the Summit County Bulletin, as follows:

FROM THE JUNE, 1938, SUMMIT COUNTY BULLETIN

"From the inauguration of the postgraduate days in Youngstown our members have attended in large numbers, nearly 30 of them this year. At our postgraduate day in 1936 it was one. In 1937 it was one. Our meetings are unsurpassed for quality of programs and speakers and the convenient quarters in which they are held. Our visitors have informed us that nowhere in their experience have meetings been as efficiently and nicely managed as have ours. The attendance of one from Youngstown is very poor reciprocity from that city."

Therefore, give this your thought and discussion and later decide whether or not it would be feasible for Mahoning to get in step with the others.

WM. M. SKIPP, M. D., *President.*

Fill It Up--

Isaly's Vitamin D Milk is now being served to more and more homes in this area. Evidence that parents, in particular, appreciate that Vitamin D is a food factor that has a definite place in helping to promote good growth. Vitamin D is necessary in order that the body may properly use the calcium and phosphorus in milk, to help build strong bones and sound teeth. Consider this finer Isaly Milk for your family. Consult with your physician. Informative literature is available upon request. Phone 6-5246.

ISALY'S

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Approved by the American Medical Association

YOUNGSTOWN'S HEALTH BUDGET

To a reasonable degree and within sane limitations, the enlightenment of a community can be judged by the amount it expends, per capita of its population, on public health and welfare.

As to the per capita expenditure that Youngstown has made for public welfare, it may well be proud. One has but to ride out to Meander Lake, follow north to the dam and purification plant at Mineral Ridge, then back to the West Side Reservoir, to appreciate how well Youngstown has safeguarded its water supply. No limit was placed as to the per capita cost of this magnificent plant so long as the result desired was obtained.

Unfortunately, Youngstown's record as to expenditures pertaining to public health, apart from its water supply, has not been such as would stamp it as an enlightened community.

For many years the health office of the city was administered with the viewpoint in mind of just how little could the health department get along on and still qualify in name. The idea thus established has so fastened itself upon the minds of our successive mayors and public officials, that today it seems impossible to secure from our budget-making-body, an amount sufficient to operate a public health office in the modern way. The last two health officers have been severely handicapped because of this attitude toward the health department.

It is of interest to know what amount is allotted our department of health. To this end inquiry was made at the Auditor's office. The following figures were furnished.

Health and Welfare

(a part of the General Fund)

1.	General Administration	$ 9,643.00
2.	Sanitary	13,240.00
3.	Quarantine	3,254.00
4.	Inspection	16,450.00
		$42,587.00

This amount divided by 170,000, the figure given by the last U. S. Census as the population for Youngstown, gives a quotient of 25c as the per capita expenditure for public health activities. I have no statistics for comparison with other cities of comparable size; however, the per capita expenditure of Cleveland for similar purposes is 60c. Evidently the Youngstown expenditure is far too low.

Youngstown should awaken to the fact that this parsimonious attitude towards the Health Department is not in keeping with modern trends. Worse, it makes possible violations of the State and Municipal health codes, as an understaffed department is unable to man the various activities that are essential if the community is to be properly safeguarded.

H. E. PATRICK, M.D., Editor.

LADIES, ATTENTION—

Have you looked into the vest pockets of your husband's suit lately? The one he wore just before he got out his summer slacks? If not, please do so. There you will find a little program of the Scientific and Social meetings of the Society for 1939.

It is to the latter, I would direct your attention. You will note that on the evening of October 21st, occurs the second annual Dinner-Dance, and of course you are all going. But the date is not so distant, just six weeks from the date of issue of this Bulletin. So once again, get the old boy's dress clothes in order—and a new gown for yourself. You all looked so beautiful last year, I don't see how you could be any more so, but of course that is what the ladies are for, to do the undoable!

I'll be seeing you.

SOCIAL COMMITTEE,
Dr. Dean Nesbit, *Chairman.*

HEAD INJURIES - THEIR DIAGNOSIS AND MANAGEMENT

By S. W. WEAVER, M. D.
Neurosurgeon, Youngstown Hospital Association

With the ever-increasing use of the automobile and other mechanical devices, the seriousness of injuries has become a major problem of everyone since it involves a large number of people either directly or indirectly. As physicians, we are naturally the most interested in treating the patients who are unfortunate in being injured rather than making stump speeches in prevention, although, the latter is certainly needed if we had the time and if everyone "coöperated."

It has been roughly estimated that over 60% of those injured in automobile accidents receive some type of head trauma particularly to the brain. It is interesting to note here that there are more deaths in the U. S. from automobile accidents in one year than there were in three major battles during the World War. Further interesting data concerning the progress in cranial injuries in the past 125 years is mentioned by Munro in a paper given before the Connecticut State Medical Society last year. At that time (125 years ago), John Abernethy voiced his opposition to trephining the skull in all head injuries before the Academy of Surgery in France. In those days and even 100 years later, the pathological background was provided by the terms, "concussion," "contusion" and "compression" and these remained the diagnostic criteria during that period. About 1915 trephining the skull for acute head injuries again became in vogue and were done indiscriminately, which of course brought bitter opposition from many surgeons, neurologists and neurosurgeons. Even to that late date venesection was commonly practiced for the relief of pressure. Lumbar punctures were comparatively new and were branded as dangerous procedures. Compound and depressed fractures and meningeal hemorrhage were then and had been a legitimate excuse for operative interference for over 50 years. After the world war Weed, Dandy and others, introduced data on the physiology of the spinal fluid which led directly to a new method of treatment namely, "dehydration," and renewed interest in the use of lumbar drainage which was adopted. Trephining, as we now call subtemporal decompression, was reserved for the obvious operative cases. The term "fractured skull" was used loosely to include all types of head injury, and unfortunately still used too frequently to describe brain trauma. To this point a combination of pathology and physiology were used as a basis for the diagnosis and treatment. This does not scratch the surface of the various methods used until very recent years and even at the present time including those who believe in rest in bed and doing nothing, which has its virtues but will sooner or later result in an unnecessary death.

Is it any wonder that the entire subject has been confusing and anyone who was not in a large center was unable to read the various articles and know which to follow as all were convincing in their arguments. Today methods of treatment of craniocerebral injuries should be fairly well standardized, yet there are those who refuse to heed experiences of others and dogmatically curse the use of lumbar punctures and dehydration or decompressions. Isn't it much more logical to know when to use all of our methods where indicated, based not only on pathology and physiology, but also neurology and a huge number of cases that have been studied and treated successfully?

It is therefore my plan to mention the diagnostic points which are most important and after all, the only reason for making a diagnosis is to pro-

vide a foundation upon which a rational method of treatment can be based. As an aid in establishing such a basis, a knowledge of normal anatomy and physiology of the injured parts are essential. Therefore the diagnosis of a given injury must be a descriptive term of the damage to the brain involved. For example, increased intracranial pressure may be due to numerous conditions, either trauma or tumors which demand a different type of treatment. Another is the term, "fractured skull" which means nothing if the brain damage beneath is minimal or on the other hand, there is a large subdural or extradural hematoma which is not recognized or mentioned. We also see extensive brain damage where there is no demonstrable skull fracture and very little evidence of trauma to the soft tissues externally.

One must use all methods of investigation in making a diagnosis and the most important of these are first, lumbar puncture to determine the intracranial pressure accurately, using a manometer and at the same time noting the color of the fluid. If the pressure is high, then it should be reduced at the same time. The most important exception to this is the presence of shock where it is advisable to wait for a while. X-rays are very enlightening for diagnosis where an extradural hematoma is suspected, with a crack across the arterial groove. It is also indispensable in questionable compound frontal sinus fractures that cannot be seen or palpated. Here again, it is neither wise nor essential to take routine x-rays of the skull when the patient is in shock and any additional moving will add to the seriousness of the patient. Wait several days then get x-rays as they are indicated either for additional information and certainly for medico-legal protection. As a general rule, I am sure that I can make a more accurate diagnosis by doing a neurological examination objectively especially regarding the reflexes as to whether they are equal on both sides of the body, presence of paralysis and most important of all, the size and equality of the pupils, followed by a lumbar puncture for pressure and color of the fluid. To be sure, the consciousness of the patient and the history as to lapses of unconsciousness and consciousness are imperative.

The classification, I prefer to follow, is in keeping with the preceding comments and thus divided into:

A — Non-Operative Group which includes:

1—Concussion,
2—Edema and Congestion,
3—Contusion and Laceration.

At this time, I want to object to the term concussion when it is meant to include all type of brain trauma as it is so frequently used. All head injuries are no more concussions than all colds are pneumonia. Furthermore, concussion is a symptom and not a diagnosis. For convenience sake, it is placed here as the mildest type of injury, where the patient has received a blow on the head and was dazed or perhaps had some degree of unconsciousness but who on recovery, presents no residual symptoms or signs. There is no rise in the intracranial pressure and the spinal fluid is clear. The pathology is unknown but many theories have been advanced which I shall not mention except to say it is probably both a molecular disturbance of the cell constituents along with a change in the cerebral circulation. Some think a vagal reflex is important. Cases of true concussion according to Munro occur in about 1% of the hospital type of cranial injuries and no doubt a higher total, as many of these are not taken to a hospital. These all recover.

2—*Edema and Congestion* is the next more serious type of injury which is really superimposed on a concussion. It consists of an increase in brain volume caused by over dis-

tension of the perivascular and perineuronal spaces, with venous congestion, absorption of the spinal fluid is retarded and may result in small intra-cartical hemorrhages. These patients have a history of a blow on the head sufficiently severe to cause unconsciousness of some degree. Following the conscious stage, they have headache, dizziness, nausea and vomiting and sometimes, some weakness of an arm or leg or both and at times, convulsions. The intracranial pressure is increased usually to 170 to 250 mm. of water. The fluid is clear, contains no blood and has a normal chemical content.

These make up about 23% of hospital cases and the mortality should not exceed 1%. Treatment consists of reducing the pressure by means of lumbar puncture or mild dehydrations with hypertonic glucose, especially 50%. It is necessary to check the intracranial pressure by lumbar puncture when dehydration is used as it is not always as we expect. Toxic dehydration must be avoided which is manifest usually by a high temperature and the patient becomes confused or irrational or goes deeper into unconsciousness.

3—*Contusion and Laceration.*

Contusion is a more severe trauma than edema and here there is a bruising of the brain with a rupture of one or more cortical vessels. If the injury is severe enough to actually tear the brain substance, then it is called laceration. These are not distinct and merge together to a great extent. Both present a history of a severe blow on the head or signs of it and the patients are unconscious for a period. They may remain unconscious several days. They usually have a loss of tendon reflexes at first and are limp and flaccid. Respirations are labored and often irregular and pupils frequently dilated or unequal. Pulse rate is increased at first, then slowed if the intracranial pressure remains high and is not reduced. They are always in some surgical shock and 24-36 hours later when they have recovered from the shock, show signs of improvement. They invariably have loss of memory for certain periods and have nausea and vomiting followed by rather severe headache. The intracranial pressure is high—from 250 to 500 or 700 mm. of water—depending on the severity. The spinal fluid is pink or grossly bloody, sometimes appearing as pure blood. A differential point here is that the fluid does not clot as does pure blood from a "traumatic tap" and three test tubes have an equal amount of blood. Supernatant fluid is xanthochromic or yellow within a few hours' time.

Treatment—In the acute stage, consists of hypertonic glucose, 100 c.c. of 50%, intravenously and is repeated if necessary for the shock. Lumbar punctures for the relief of pressure. Dehydration alone in these cases is never sufficient without lumbar drainage. Decompression trephining is not indicated unless one suspects an additional hematoma and the patient fails to improve after a reasonable interval, roughly 4 to 5 days.

These cases make up about 50% of hospital cases especially on a neurosurgical unit where the severe cases usually land. The mortality is around 18%.

The second group is made up of the B—Operative Cases which include:

1—Subdural Hemorrhage;

2—Compound Fractures of the Skull;

3—Depressed Fractures of the Skull;

4—Extradural Hemorrhage.

The group makes up about 30% of all craniocerebral injuries and the mortality rather high—31% (Munro).

1—Subdural Hemorrhage is in reality the most common form which is so frequently unrecognized. This is contrary to the general belief that

Coming Scientific Programs

October 17th

•

LOUIS H. NEWBURG, M. D.

from

UNIVERSITY OF MICHIGAN

•

Subject

METABOLISM

November 21st

•

JEROME SELINGER, M. D.

from

NEW YORK POSTGRADUATE SCHOOL

•

Subject

PEPTIC ULCER

Annual Business Meeting

December 19th

YOUNGSTOWN CLUB

Annual Picnic

THURSDAY, SEPTEMBER 14th

MILLIKIN'S FARM

•

Same Place - Same Time - More Fun

Corn Roast and Clam Bake

Scientific Meeting

TUESDAY, SEPTEMBER 19th

•

Guest Speaker

DR. WALTER M. SIMPSON

•

Subject

Artificial Fever Therapy

•

YOUNGSTOWN CLUB

8:30 P. M.

Second Annual Dinner Dance

SOUTHERN HILLS COUNTRY CLUB

October 21st

This is one gathering you cannot afford to miss.

extradural hemorrhage is most frequent. These are almost always associated with one of the forms of Brain Pathology except when there has been an apparent trivial injury and one of the bridging veins crossing the subdural space has been ruptured.

Subdural hematomas are best divided into three groups:

The first and most classical is made up of pure blood and partially clotted, later to become encapsulated. These may be unrecognized for months or years and not infrequently are discovered where a tumor is suspected or during a search to find a cause for a type of epilepsy. These do not expand.

The *second* group is a solid clot mixed with spinal fluid and become walled off as a collection in the subdural space. Expansion takes place up to three months by dialysis bringing more fluid into the space as the blood contains a higher concentration of serum and protein.

The *third* group start as blood in the cerebrospinal fluid and has no solid clot. They may expand up to one month in the same manner as the second group just mentioned.

All of these are finally diagnosed by exploratory craniotomy regardless of how strongly one may suspect them before operation. The acute types causing symptoms are most frequently seen from two or three days after an injury up to three weeks or a month but at times they are seen a few hours up to several weeks. After this acute stage, many are diagnosed as post-traumatic neurosis because of their headaches and lack of neurological signs.

In acute stages of expansion, the intracranial pressure is usually raised i. e., 170 to 250 mm. of water. The spinal fluid may or may not be blood tinged but in the first few days, the majority do show some presence of blood, either pink or yellow color. Later on, the pressure is usually normal. All types are prone to be bilateral, especially the third type.

Localizing signs are on either the opposite or same side as the lesion and must be diagnosed by subtemporal trephinement.

At the Boston City Hospital, there were few if any suspected or diagnosed before 1933 but since then, there have been well over 150 cases that I know of personally and most of them would have died had they been disregarded; thanks to Munro, Cobb and Leary, who had the courage to investigate the suspicious cases of acute head injuries.

2 — Compound Fracture of the Skull may be linear, comminuted or depressed or may involve the cranial venous or frontal air sinuses. Frequently these are severe and one sees the cerebral substance exuding from the wound. These cases should first be treated for their acute shock by giving hypertonic glucose, elevating the foot of the bed and lumbar puncture as indicated. Place on the wound a sterile dry dressing without shaving or irrigating with any solution. Plan their operative treatment to be done in an operating room under sterile precautions and be prepared to handle the most major problem which usually is in the form of hemorrhage. Debride all layers including the scalp, bone, dura and brain in the compounded area and suture the scalp in two layers with fine silk leaving *no* drains. The exception to drainage is a compound frontal sinus fracture where debridemount is still done followed by drainage of the sinus preferably with a rigid drain, which allows the wound to granulate from the bottom. This is a slow process of convalescence but a live patient at the end of two months is better than a dead one from meningitis in four days with a nice looking sutured wound. The mortality of compound fractured skulls is about 32% including all cases, especially those who

die in the first 24 hours. They make up about 11% of all cranio-cerebral injuries.

3—Depressed fractures of the skull occur in about 5% of all cranial injuries. There is nearly always brain damage beneath, which varies from edema and contusion to bad laceration. The diagnosis is best made by x-ray as palpation is often misleading especially in the presence of a large subperiostial hematoma.

Treatment is operative elevation providing the patient is not in shock except those in the region of the foramen magnum which are left alone. Remove only the necessary bone and if there is underlying damage, open the dura to allow for expansion or rule out a subdural hematoma. It is much better to elevate depressed areas after the intracranial pressure has reached a normal level by the various methods of lumbar drainage and dehydration for several days previously. One must use surgical judgment if the bone is deep and large. One of the main reasons for waiting is to avoid unnecessary bleeding from the surface vessels during the stage of venous congestion.

4—*Extradural Hemorrhage* is the last of the operative group. These have been the classical text book descriptions of a patient who lapses into unconsciousness one or more times following a head injury. They most frequently make their appearance through symptoms and signs within the first few hours up to three days. They are much more apt to cause localized signs of muscle weakness, dilated pupil or paralysis than a subdural hemorrhage since they must dissect the dura from the skull and are more prone to press in a given direction whereas the subdural hemorrhage is free to extend over the entire hemisphere. They are the result of a ruptured middle meningeal artery or its branches or from a tear in one of the venous sinuses especially the lateral sinus. Treatment is always operative as soon as the diagnosis is made or suspected. X-rays often help by showing a fracture across the arterial groove. Remove the clot and control the hemorrhage. Secondary edema of the brain is prone to occur so that it is frequently wise to open the dura widely and decompress, as well as institute vigorous dehydration. In spite of the removal, the mortality is the highest of all, being about 59% and exceeded only by that of a complicating meningitis.

Complications of all head injuries are mostly made up of (1) general physical conditions, shock and toxic dehydration; (2) infection with compound fractures and (3) fractures of the vault and base.

Discussion—There are a few misconceptions that I wish to mention that have caused considerable trouble at one time or another as well as discussion.

One is the concept that reducing the intracranial pressure increases cortical bleeding. This idea is false as Cobb and Lennox have shown that increased intracranial pressure raises the venous pressure and hemorrhage is increased, rather than that hemorrhage is due to low pressure.

The other misconception is the use of morphine in acute cranial injuries. The cause of death in this type of case is invariably respiratory paralysis and we have known for years that morphine is a respiratory depressant. Besides this reason which is adequate, it is very apt to cover up any significant signs or symptoms as much as it does in an acute abdomen. It should *never* be used where there is intracranial pressure or where pressure is even suspected.

Swift estimates there are about 112,000 fractured skulls in the U. S. each year and our responsibility as physicians is equally increased to care for them intelligently.

★ **PATRONIZE OUR ADVERTISERS AND MENTION THE BULLETIN** ★

THE MEDICAL CRIER

A Page of Sidelights, News and Views in the Medical Field

• Cleveland holds the spotlight this fall for scientific programs. The first American Congress on Obstetrics and Gynecology from September 11 to 15 will fill the Public Auditorium with visiting doctors including most of the notables in these specialties. To read the program is enough to make you vow not to miss it. All sessions are held in the morning and Cleveland is close enough that you can get up early, attend the meetings and be back in time for your office hours.

Then, on Mondays, Wednesdays and Fridays all through October there will be a free lecture course in Recent Advances in Medicine and Surgery at the City Hospital, given by Western Reserve Medical School teachers. These lectures are all at noon and are over by 1:15 P. M.

The Frank E. Bunts course given at the Cleveland Clinic will be Nov. 6, 7 & 8. The subject is General Diagnosis and Treatment. The Bunts course has its regular followers from Youngstown and any one of them will tell you that for subject interest, intensive teaching and hospitable treatment, they can't be beaten.

• Those of you who think the Wagner Medical Practice Act is a dead issue are living in a fool's paradise. Wait until the next session of Congress. And if by kind providence the blow should not fall then, read what was said in a recent address by Senator Robert A. Taft, prominent Republican presidential candidate, "I believe that in 1940 a Federal Medical Program of some kind will be adopted. What form it takes depends largely on the medical profession—I believe a Federal aid program can be worked out — I believe it can be worked out with the assistance and cooperation of the doctors themselves."

The last sounds a little encouraging and takes away some of the sting. But remember there are doctors and doctors. There are doctors in medical schools who are better teachers than they are practitioners. There are doctors who are better politicians than practitioners. There are doctors who are purely public health men. There are doctors who represent the A. M. A. Which ones will be consulted? It makes a great difference where the coöperation comes from, even in the medical profession.

• Those who read Grapes of Wrath will recognize a similar rumble of discontent in a letter to the Editor culled from a Montreal newspaper. "Dear Sir," it said, "A few months ago you asked this question in your column, 'Is the Back to the Land Movement a failure because 50 per cent of the Colonists returned to Montreal, has it failed because half the families which resolved to go back to the life of their pioneer fathers and grandfathers eventually decided that they preferred the dole and the city streets?' My answer to that question stated these settlers did not prefer the dole and city streets, but could not and would not stay on the rock piles and musky and hear their children cry and ask for food we did not have to give them and watch them slowly starve to death—the conditions under which we have tried to exist the last five years always hoping the next year will be better, trying to work a little harder and a little longer, yet in fact doing less, because each year, each month and each day we have gotten weaker and more run down, till now at last we only work a few hours a day and have to stop. We wake in the night with our stomachs twisted and knotted up with pain for something to eat, now add lack of sleep to lack of food and you have a great combination on which to go out and cut down trees, pull stumps, clean and cultivate land with a grub hoe and axe. . . We also have had medical troubles, one doctor sent in by the Government had witnessed two

confinements but never conducted one, his first confinement case he kept the woman in torture from Monday till Thursday when the husband and government inspector got in another doctor from Ste. Rose, 20 miles away; 30 minutes after his arrival the baby was born dead and the mother nearly went as well. These people are now back in the city. . . In LaFerte a woman gave birth to twins, as there was no doctor or nurse here at that time; the other settlers' wives did the best they could but it was not good enough; the mother and one baby died; a box was made of ½-inch sheeting boards for a coffin, a hole dug in the bush 4 feet deep and she was buried there with the baby without preacher or service, just like a dog; the man then returned to Montreal with the rest of his family."

Problems of indigent relief and medical care are apparently much the same in Canada as in this country, even with its great open spaces, its lakes and rivers teeming with fish, its forests and pioneer country. Garrison said that most of our pioneers were failures looking for a fresh start, and many of them were failures in their new land.

● Schools are now open and the children have returned rosy cheeked and healthy. Why is it that they come down with such severe respiratory infections promptly at the first contact with some other sneezy, sniffly youngster? There seems to be no resistance imparted by months of summer sunshine. They behave like aboriginal people exposed to some new contagion like the healthy South Sea Islanders who succumbed to tuberculosis. Resistance to respiratory infections seems to be acquired and kept by living with the germs. If there was one medical discovery we could ask for now it would be a satisfactory method of immunization against the common cold. —J. L. F.

DIARRHEA

By A. W. MIGLETS, M. D.

Diarrhea is not a disease. It is one item of a symptom complex. Steadily the deaths caused by it have decreased, although it is still credited with first place among the disorders that kill infants.

Marriot holds that among the things chiefly important are peculiarities of the infant's gastric juice and alterations which it undergoes. The gastric juice of the infant is well adapted to initiate the processes of digestion when human milk is fed, but it fails measurably when it has to deal with cow's milk. This failure arises because the cow's milk has a very much greater concentration of buffer salts and protein. The result of this is to neutralize the effectiveness of the acid constituents of the secretion.

The secretion of the gastric juice and the other digestive juices is diminished or inhibited by fever, by high external temperatures, and by constitutional states, such as are found in prematurity and congenital debility. It is also adversely influenced in the presence of infections whether these occur in the digestive tract itself, in the upper or lower respiratory area, or as localized infections in other parts of the body, producing absorbable toxins. The poisons produced by some strains of bacteria, particularly of streptococci, are potent to initiate diarrheas.

The ingestion of foods contaminated by various strains of bacteria is productive of diarrhea, such as the para-typhoid or para-colon groups. It is because of these facts that it is necessary to insist, not only on scrupulous cleaning and cleanliness in the

production of dairy milk, but also on the pasteurization and the boiling of all milk, including *certified.*

It is also well to recall that the addition of lactic acid to milk formulas gives an added insurance of sterilization, so that it becomes desirable to use lactic milk whenever there is doubt about the intelligence of the housewife and of her ability to keep the baby's food clean.

There seems to be no doubt that the presence of bacteria in the upper duodenum may play an important role in bringing on diarrhea. Even the presence in these upper intestinal reaches of colon bacilli, normal inhabitants of the lower smaller and the large intestines, seems to be causative in certain diarrheas. Evidence for this view is found in the fact that while certain colon bacilli are never discovered in the stomach or duodenal contents of vigorous healthy infants, many investigators have found them present in these regions in patients with diarrhea. Opinions differ as to whether their presence is a cause or a result of the diarrhea; evidence favors the former idea.

Frequent stools small in amount may result from a restricted intake of food or fluid.

It must never be forgotten that diarrhea is a protective reaction—in part nature's attempt to rid the intestinal tract and the body of deleterious substances. These substances may have been ingested; they may be the result of imperfect enzyme action or they may be the products of bacterial metabolism or an attempt to balance the various mineral constituents of the body.

Diarrheas can be divided according to their etiology into *mechanical, fermentative, infectious,* and *proteolytic.*

Mechanical diarrheas always result from the ingestion of unsuitable food or of foreign bodies, or from overfeeding with indigestible milk.

Such diarrheas are unaccompanied by fever, toxemia, and prostration. The patient is readily restored to health by the institution of a bland diet which should be preceded by a brisk cathartic, such as castor oil.

Fermentative diarrhea constitutes a large portion of summer diarrhea, a malady very prevalent and fatal in large cities. The general and undirected use of infant foods *overhigh in carbohydrate content* is etiologic in many cases. Diarrheas of the fermentative type are rarely sudden in onset. Usually there will have been a prodomal period during which the child regurgitated a greater or smaller amount of sour, watery fluid, about an hour before meals, and the attack of loose evacuations will have been preceded by transitory seizures of abdomenal discomfort. Usually there has been an excoriation of the buttocks.

The stools are characteristic in that they are always copious, fluid, partly absorbed by the diaper, *and of lactic acid odor;* they tend to be green in color and to contain mucous mixed with semisolid fecal masses. There is little toxemia and rarely more than a little fever until the child begins to show the effects of dehydration which follows when loss of fluid from the bowel is prolonged.

Treatment in the earlier stages must be directed toward preventing this dehydration, and in the well developed cases toward combating it. The first and most essential steps are the withdrawal of carbohydrates and the provision of a high protein food which is readily available in the form of protein-milk or lactic acid milk, with dextrose in small amounts.

Proteolytic diarrhea is characterized by frequent evacuations of yellowish or brownish stools semi-solid, liquid or mixed in consistency. Most often they have an exceedingly foul odor. These characteristics depend upon the nature of the proteolyzing organisms present in the stool. In the milder cases, anorexia, pallor, sunken, deep-ringed eyes are evident; once

dehydration has occurred the temperature may be normal, subnormal, or slightly increased; the pulse and respiration tend to be slow and irregular. The intermittence of the diarrhea is a prominent feature, and in many of the less severe cases the child will have 2 or 3 days of loose evacuations followed by a day or two of constipation. The distaste for food is profound. The urine becomes concentrated and scanty. Most of these babies are restless and irritable. The ingestion of milk is invariably followed by an increase of all the symptoms, and its withdrawal by a striking diminuation in the number and volume of the stools.

In the more severe cases the stools are more liquid and more frequent; sometimes 20 or 25 evacuations are passed in 24 hours. The toxic manifestations are of extreme severity. Restlessness and irritability are alarming and may give place to somnolence and even coma in the full development of the disease. The dietetic treatment is perfectly obvious—complete withdrawal of proteins for a short period. For 24 to 72 hours nothing is to be given except a 10% sugar solution, milk sugar. In those cases in which toxemia is well developed or in which dehydration is advanced 100 to 300 c.c. of Ringer's solution should be given intraperitoneally. After 24 hours of exclusive lactose feeding, cereal gruels may be added to the diet.

The *infectious diarrheas,* dysentery and ileocolitis are generalized bacteriemic infections. Their intestinal symptoms are the result of the reaction of the intestinal tissues to invading bacteria which produces destruction of the mucous membrane. The evidence of this destruction appears in the bowel evacuations as blood, pus, epithelium and masses of necrotic tissue. The Flexner, Shiga, or Hiss-Russell types of organism may be etiologic. Meyer now feels that Hiss-Russell and other types are really Flexner organisms and that an exact differentiation between them is not possible.

In the treatment of dysentery of the Flexner, Shiga or Hiss-Russell types, the early and ample injection intravenously of a polyvalent dysentery serum is specific.

The *typhoid, paratyphoid,* and *paracolon* groups of organisms are responsible for a small number of infective diarrheas. Unfortunately, we have no specific serum effective in combating the toxins produced by these micro-organisms.

The diarrheas of a streptococcus origin are infrequent, although it is common to find streptococcus in the evacuations of infants suffering from diarrhea. In most cases, the diarrhea is but one phase of a streptococcic septicemia.

General management of a patient with diarrhea. Period of starvation. It is a good practice to withhold food for 12 hours; sometimes 24 hours may be imposed with advantage. The use of fluid, however, is essential from the first. This may be given in the form of plain water, barley water, normal saline solution, or weak tea; the latter is of great value where stimulation is needed badly.

The *most* important part of the care of diarrhea is the supply of an adequate amount of fluid. We must be prepared to inject fluid under the skin or into the peritoneum. Blood transfusions are often life saving measures. When the patient's temperature ranges above 103 degrees, the use of a tepid bath or cool pack may be a life saving measure. To maintain a mild surrounding temperature is as important as to keep the child's fever at a low level. For the control of fever in this group of disease, drugs are unnecessary and often damaging.

No single therapeutic measure, excepting maintenance of water balance, is more effective in the treatment of diarrhea than the obtaining of tranquil repose for the child. The judicious selection of one of the many

hypnotic or sedative drugs may be indicated; particularly opium and in some cases chloral may be found very useful.

Foods that may be used to advantage. The answer to this question will depend on the type of intestinal flora. If the stools are acid green, and excoriating, a food high *in protein and low in carbohydrate will be indicated.* On the other hand, if the evacuations are brown and watery, and stinking with putrefactive odors, it will be of advantage to include a fair amount of carbohydrate.

Raw milk should never be used in formulas for infants under treatment for diarrhea.

Children in later infancy, who are attacked by *proteolytic diarrhea* are more comfortable and return to health more rapidly if milk is excluded from their dietary altogether. Potato is one of the last foods to be added to the dietary of a child who has suffered from diarrhea.

Innumerable drugs are used. The most commonly used is bismuth, and it is best prescribed in the form of subcarbonate in the subacute stages of the disease. 15 grains at three-hour intervals. Hypodermic injections of emetin for the bacillary dysenteries. The use of opium by mouth when properly given is useful. When used the drug should never be added to a diarrhea mixture.

Whether the diarrhea is of an infectious or a noninfectious origin, the circulatory and nervous complications are a constant source of danger to the child. There is no drug so valuable as camphor, which should be given hypodermically. When abdominal pain is a complication of diarrhea, atropin is a drug of great value.

In all details except the feeding itself, the *treatment of infectious diarrheas in the breast fed* is identical with that outlined for the treating of the artificially fed.

The chronic diarrheas are divided into two classes; continuing and recurrent. Rolleston and Nabarro have shown that the dysentery bacillus can become deeply lodged in the intestinal mucosa and cause recurrences in certain kinds of diarrhea which follow an earlier attack of dysentery.

Once the type of diarrhea is clear, a purge of castor oil should be given. For a few days a daily bowel lavage of 2 quarts of 5% sodium bicarbonate solution is desirable; 6 or 8 ounces of this solution should be run into the bowel and siphoned out and the process repeated until the 2 quarts are used. Milk, meat, and egg white are rigidly excluded from the dietary.

The group of diarrheas with acid stools, which includes the variously called "starch indigestion," "mucous disease" and "chronic saccharolytic diarrhea" is not uncommon during the second year but is more frequent later in childhood. Examination of the iodin-stained stools of these patients reveals large amounts of free unsplit starch.

The *treatment* is essentially dietetic. The complete withdrawal of potato, and the coarser cereals from the diet will effect a cure.

Celiac disease is a disturbance of nutrition in which the most characteristic symptom is chronic diarrhea. The condition is also written of as *intestinal infantilism, chronic intestinal indigestion* and *pancreatic insufficiency.*

The symptoms of the disease are diarrhea, wasting muscular weakness, abdominal distention, anemia and psychic disturbances. The stools passed by these patients are bulky, pale gray, smooth and glistening with mucous.

The indigestion may be so extreme that unaltered protein appears in the stools, together with wasted starch and fat.

In spite of many attempts to find them, the causes of celiac disease remain undiscovered. In certain instances the affection may be the result of a duodenitis, which has been followed by an ascending infection of the pancreatic ducts, with pancreatic fibrosis. Another idea is that some

specific change has taken place in the intestinal mucosa. A third idea that the etiologic factor is the establishment of an abnormal bacterial flora in the gut.

Treatment. Feeding, low fat, and a high protein diet, the insurance of a normal sugar level in the blood by the use of dextrin solution; the conservation of the patient's energies and the restitution of his muscular tone and bodily vigor; the overcoming of anemia by drugs and diet if it be slight, and by transfusion if it be severe.

FROM THE SECRETARY

The next regular Council meeting will be held Monday, September 11, the day your *Bulletin* is in the mail, therefore the October publication will carry the details of the meeting.

JOHN NOLL, M. D., Secretary.

The Medical-Dental Bureau Doctors' Secretaries Organization

Announces a

FORMAL HARVEST MOON DANCE

Tuesday, September 26, 1939

Mahoning Valley Country Club

DANCING CARDS DOOR PRIZES

9:30—1

Ruth Autenreith Orchestra

$1.00 Per Person

Medical-Dental Bureau members and their wives are invited.

THE FALL LECTURE SERIES

Dr. McCann and the Program Committee regret that Dr. Beckman will be unable to give the course of lectures for which he was scheduled. Dr. Beckman had an opportunity to go South and spend several months this fall studying various treatments of malaria. Our loss will ultimately be the gain of the entire profession as, no doubt, the results of this study will be forthcoming in the next edition of his work on Treatment.

Nothing daunted, Dr. McCann is leaving for Baltimore and points East this month and swears he will return with a lecture course attached to his belt. We know he will, so sit back and await further announcements.

—H. E. P.

NEWS ITEMS

Dr. and Mrs. D. A. Gross and Dr. and Mrs. W. B. Turner enjoyed a month's vacation in Los Angeles.

Dr. and Mrs. D. M. Rothrock spent two weeks touring the Northwest.

Dr. and Mrs. L. W. Weller have returned from a visit to New York, including the Fair.

Dr. and Mrs. Claude B. Norris motored to Cleveland the 27th accompanied by their house guest Mrs. Lillie Strosler, San Antonio, Texas.

Dr. and Mrs. J. L. Fisher and children have arrived home after an enjoyable motor trip up the St. Lawrence to Quebec, returning by way of Lakes Champlain and Placid.

Dr. and Mrs. Colin R. Clark are home after a few days at Mountain Lake Park, Maryland.

St. Elizabeth's Hospital News

Dr. Skipp has changed his afternoon off from Thursday to Wednesday.

Drs. J. M. Ranz, Clifford, Kupec, Marinelli and Osborne have returned from a fishing trip in Canada. Fish —you should hear about the obedient fish.

Dr. M. Conti has closed his local office and is serving in the U. S. Navy.

Dr. Joseph Nagle has returned from one of those famous fishing trips.

Dr. and Mrs. Wasilko have been visiting in New York.

Drs. Baker, A. E. Brant, Collier, Morrell, Fuzy, Clark, McNamara and McCann are attending the National Cancer meeting in Washington. Dr. Collier will join Drs. Brant and Baker Monday to attend the Cancer Research Congress at Atlantic City.

Dr. Peter L. Boyle is attending the Obstetrician's Clinic, Cleveland.

Dr. Mermis has returned from a short visit in Boston.

The hospital has the pleasure of having as their guest Dr. Demetrius Kouloukis, eye, ear, nose and throat specialist of Athens, Greece. Dr. Kouloukis spends much time at the hospital, which seems very interesting to him.

Dr. McConnell is spending some time in the Adirondacks.

Youngstown Hospital News

By S. J. KLATMAN, M. D.

Several weeks ago it was my privilege to overhear the preparations being made for the opening of the Clinical-Pathological Conferences and the plans for the coming year. A group composed of Drs. Coombs, McKelvey, Myers, Kling, Brandt, Keough, Patrick, Baker, and Kramer were really putting on the steam shaping things up. From what I heard and saw, these conferences are going to have plenty on the ball and their educational value will be unlimited.

The first of the conferences was held Friday, September 1st, under the guidance of Dr. Myers. A clinical diagnostic problem was presented and discussed. The attendance indicated the interest being taken in the conferences this year for all the seats in the room were occupied.

The conferences are to be held every Friday morning between 11:30 and 12:30. During their course symposia covering every phase of diseases of the chest will be presented.

The Pittsburgh Otological Society announce a joint meeting with the Cleveland Otolaryngological Club
Wednesday, September 27th
Edgewood Country Club
Pittsburgh
Dinner 7:00 P. M.
Make reservations with the Secretary.

Read Cleveland Program on Obstetrics and Gynecology also General Diagnosis and Treatment in the Medical Crier, page 265.

STARK COUNTY MEDICAL SOCIETY

POST GRADUATE DAY

Wednesday, October 11th, 1939

CANTON, OHIO

Program

"The Present Status of Surgical Treatment of Peptic Ulcer"

Geo. P. Muller, M. D., Professor of Surgery at Jefferson Medical College and present President of American College of Surgeons.

"Medical Aspects of Gall Bladder Disease"

Martin E. Rehfuss, M. D., Professor of Clinical Medicine at Jefferson Medical College.

"Recent Developments in the Treatment of Pneumonia"

Hobart A. Reimann, M. D., Professor of Practice of Medicine at Jefferson Medical College.

"Medical and Surgical Treatment of Pelvic Disease"

Brooke M. Anspach, M. D., Professor of Gynecology at Jefferson Medical College.

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