BULLETIN

of the

Mahoning County Medical Society

"Education consists in increasing the number of points at which one touches life."—*Emerson.*

April, 1936

Volume 6 Number 4

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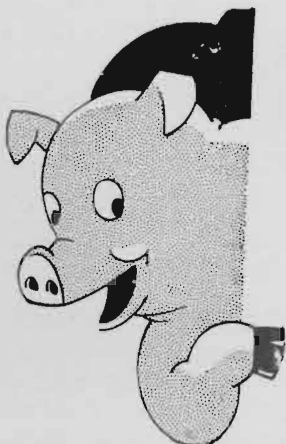

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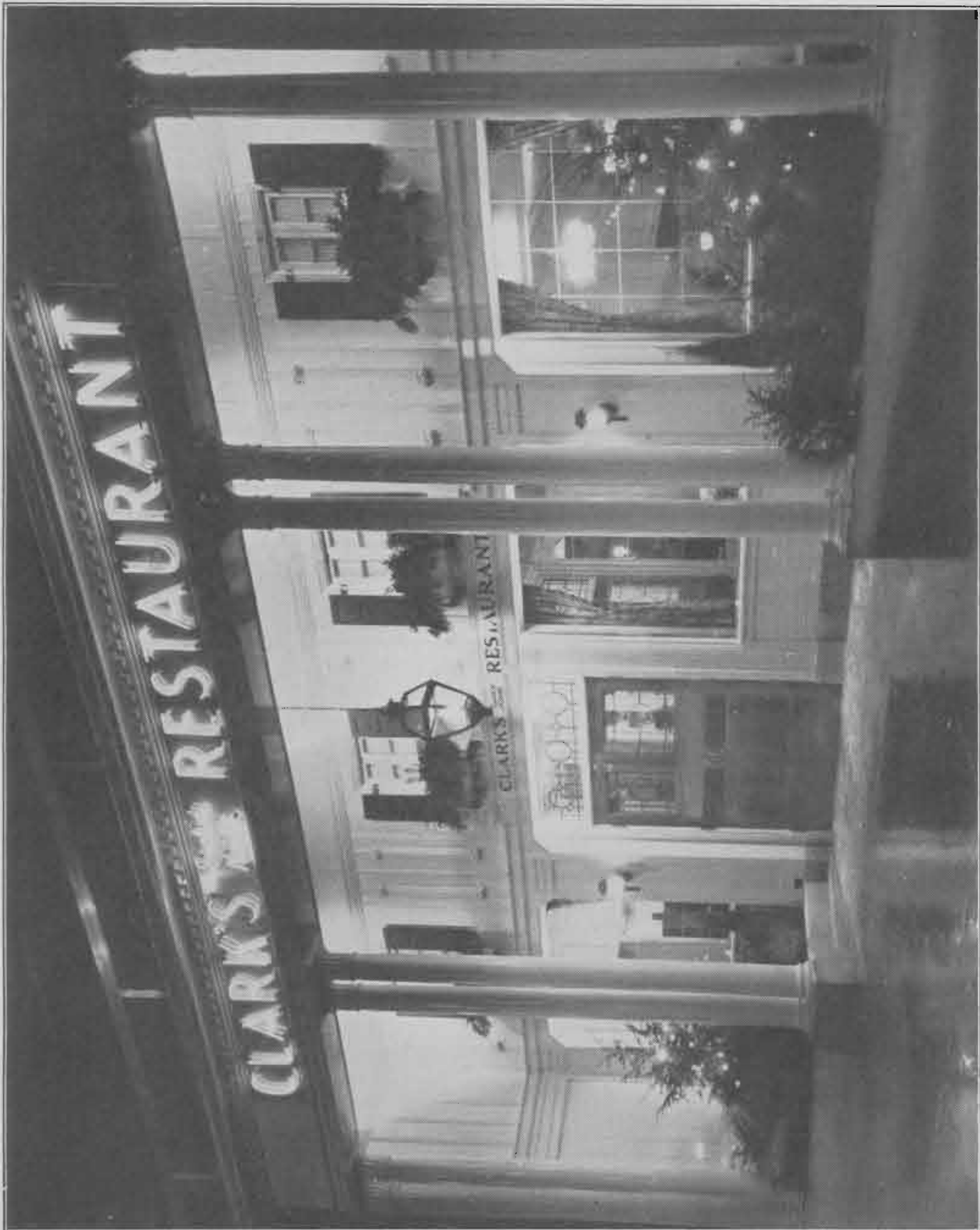
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PRESIDENT'S PAGE

Recent statistics show that in Mahoning County for the last ten years there has been an average yearly incidence of 138 cases of diphtheria—with an average of 16 deaths per year from this disease. This gives an average of 6.7 death per hundred thousand per annum. There are only nine other counties in the state, there being eighty-eight in all, which suffered a higher mortality rate from diphtheria. Therefore, we occupy seventy-ninth place in such a listing of Ohio Counties! And we like to think that we are a progressive, alert, up-to-date medical centre, if you please. Methinks we had better get out of this seventy-ninth position—with a 50 per cent. higher than the average for the State.

We all know of, and appreciate, the good work which has been done in Mahoning County to reduce the incidence of diphtheria. It has met, however, with only partial success and the fight must be carried on.

Dr. E. H. Nagel and his Public Health Committee have been working hard in an effort to properly organize the campaign against this common public enemy. They recommend, in brief, a continuance of the methods formerly used with particular emphasis upon the necessity of pre-school immunization. An intensive effort to arouse interest and dissipate both ignorance and apathy will be made by this committee, in co-operation with other organizations, April 20th to May 14th, with the active co-operation of the newspapers and radio, schools and churches, City Council and Parent-Teachers Association, Visiting Nurses Association and Medical Society. This campaign cannot fail.

DR. L. G. COE.

BULLETIN
of the
MAHONING COUNTY
MEDICAL SOCIETY
APRIL 1936

SOME REMARKS ON THE GONOCOCCUS BOUILLON FILTRATE

By HENRI SCHMID, M. D.

How are we to reconcile the good results reported by some men from the use of the Gonococcus Bouillon Filtrate, with the opinion of others who say they are unable to tell whether the filtrate has any value? Why do some physicians believe that the use of the filtrate causes more posterior involvement or prolongs unduly the course of the disease? How do we account for the fact that some patients, treated mostly by injections of the filtrate, still harbor gonococci in their prostatic secretion after an apparent cure has been established?

Such contradictory results are not to be wondered at if we keep in mind some of the known facts regarding toxins, antigens and antibodies on the one hand and, on the other, the complete lack of experimental information regarding the mechanism of immunity production in gonorrhea.

The use of a toxin filtrate in the treatment of gonorrhea may seem, at first, like a new departure in vaccin therapy, but on closer analysis one will probably come to the conclusion that there is nothing new under the sun. We had the Phylacogens back in 1911-12; the Immunogens a few years ago.

Since toxins are antigenic in nature, it might be well to have a clear concept of what we understand by antigens.

Antigens are of two kinds: complete and incomplete. A complete antigen induces antibody formation and is capable of reacting with the corresponding immune antibody. An incomplete antigen or haptene is only capable of reacting specifically in vitro and does not cause antibodies to be formed.

As a rule proteins only are capable of functioning as complete antigens. "The power to invoke antibody formation is lost somewhere between the intact stage of the molecule and its complete separation into the constituents amino-acids." (Wells.)

Among the incomplete antigens or haptenes are some lipoids and carbohydrates, substances of relatively simple chemical configuration, the parenteral introduction of which imposes no burden upon the metabolic apparatus. But these haptenes, though unable by themselves to produce antibody formation are so placed in the mosaic of a complete antigen that they determine and orient the immunological specificity of the latter.

A haptene, as the name indicates, signifies a body fastened onto another, the two together forming a unit with a purpose; it may be likened to a rider fastened onto his horse by means of his saddle; the horse without the rider wanders about; the rider without his horse does not get very far, but the two together "go places."

Carbohydrate haptenes have been demonstrated in the pneumococcus, the staphylococcus, the influenza bacillus, the streptococcus, meningococcus, gonococcus and many others.

The heterophile or heterogenic antigens are those antigens which have been found in the body of many animals as well as in bacteria and yeasts, the same type of antigen having been identified in structures differing as widely as animal and bacterial protoplasm. This was first discovered by Ehrlich when he noted that a serum produced by immunization with ox-erythrocytes would lyse the red cells of the goat as well as those of the ox. These heterophile interactions usually denote the presence of chemically similar constituents in biologically unrelated forms. Such an heterophile antigen has been described for the gonococcus, meningococcus and pneumococcus Type III, a carbohydrate haptene being responsible for the overlapping specificity.

By toxins we understand a variety of antigenic, poisonous substances elaborated by or extracted from microorganisms, plants and animals.

There are some highly toxic substances which are intimately associated with and perhaps bound to the bacterial protoplasm itself. Their release in large quantities during destruction of bacteria in the body has been thought to be directly responsible for some of the pathological changes which occur during infection. However, the endotoxic effect, when studied experimentally with bacterial extracts or autolysates, is largely of the same kind, differing only quantitatively with various bacterial species. (Pfeiffer and Bessau.)

Again many hold that the endotoxins are not typical toxins because, with many of them, it is difficult to prove that they are capable of producing specific neutralizing antibodies, although they give rise to antibodies reacting with the "nucleoprotein" of the bacterial protoplasm.

The differentiation between endo- and exotoxins is probably more artificial than real since Prigge has demonstrated that washed, dead diphtheria bacilli contain a poison which corresponds in all important properties with the toxins found in the ambient fluid.

The actual mechanism of toxin formation is far from settled judging from the opinion of Walbum and Dernby, who state that the greater portion of diphtheria toxin is neither formed by the living bacterial cell, nor released by an autolysis process from dead bacillary bodies, but originated, in their investigations, from a proteolytic cleavage of the albumoses in the medium.

The majority of the known toxins exert a highly specific and selective action. One large class of microbial, plant and animal toxins are essentially endothelial poisons and cause hemorrhages in the capillaries; another small group has a specific affinity for nervous tissue. The toxin filtrate of most bacteria is a mixture of multiple toxins with diverse biological activities; neurotoxic and necrotizing substances from the diphtheria and dysentery bacilli, snake venom; tetanolysin (hemolysis of red blood cells) and tetanospasmin (nervous lesion) from the toxin filtrate of Cl. tetani.

In order to be pathologically effective, the toxin must be anchored in some way to the susceptible tissue cells, either through specific chemical affinity or through the solubility of the toxin in certain cell constituents. Once union is established it is usually

irreversible. Thus tetanus and botulinus toxins are firmly bound by nerve tissue in vitro. In vivo the distribution of tetanus toxin is exclusively along the nerve tracts.

As to their properties, most toxins are thermolabile, some thermostable. In a dried state they retain their toxicity well. In liquid form they deteriorate if kept for a long time. But, as in the case of diphtheria toxin, this loss of toxicity is not always accompanied by a loss of power to bind antitoxin. Thus toxicity and antigenicity seem to belong to different parts of the toxin molecule. With regard to their molecular organization, the toxins fall into the same range as the filterable viruses.

None of the applied methods of chemical investigations have so far succeeded in yielding highly potent preparations in a form completely free from protein because, as Wells says, "a toxin is really a protein to which is attached a toxic radical which may or may not be an integral part of the protein molecule."

An antibody is a new reaction product formed upon the parenteral injection of an antigen, which unites specifically with the antigen.

Antibodies are best described by what they do, that is in terms of antigen-antibody reactions. The more important of these reactions demonstrate the existence of agglutinins, precipitins, lysins, alexin-fixing antibodies, opsonins (tropins), antitoxins, bacterial and virucidal antibodies and anaphylactic antibodies.

While different experiments bring to light the existence of diverse antibodies, the view is generally held today, that the various antibodies may in reality represent but a single antagonistic action of the immune serum.

Chemically, antibodies are of a protein nature; they occur in the serum-globulin and some maintain that they are the serum-globulin itself; modified in some way by the antigen.

The source of antibodies is unknown just like the source of serum-globulin. No definite proof has been advanced to show that the spleen, bone-marrow, lymph glands or the reticulo-endothelial system are really the seat of antibody formation, though "blockade" experiments with colloidal dyestuffs seem to show that the macrophages are vitally concerned in antibody output.

The two main characteristics of antibodies are: 1) the capacity to react in a highly specific manner with the proper antigen, and 2) the striking disproportion between the quantity of antigen and the resulting concentration of antibodies.

What are some of the biological characteristics of the gonococcus? In the first place every one knows that it offers cultural difficulties. It grows on culture media containing blood, serum, ascites fluid or other undenatured protein of animal or human source. As for the meningococcus, two kinds of substances seem necessary, namely certain amino-acids and vitamin-like substances.

Again in common with the meningococcus, the viability of the gonococcus is not very great; it is readily susceptible to autolysis which is probably due to several factors, the relationship of which is unknown. Wollstein believes that autolysis is due to a thermolabile enzyme, while Warden thinks it is due to the hydrolysis of fatty acids which occur in high percentage in the organism.

The composition of the culture medium seems to have much to do with the colonial forms described by different investigators. It is well known that various involution forms are noticed in cultures, especially when aged: "phantom" forms, Gram positive cocci, Gram positive and Gram negative bacilli and other bizarre forms. Here might be mentioned the remark of Raven who says that cer-

tain of the Gram positive diplococci found in exudates may be of true gonococcal origin.

The typing of the gonococcus has been variously described. From cultural characteristics Atkins distinguishes two distinct types of colonies: Type I and Type II, Type I representing the highly parasitic stage of the organism while Type II denoted old laboratory cultures and forms from chronic gonorrhea. Raven obtained three types through dissociation by aging or the use of immune serum.

The serological classification varies with different authors, some describe three types, some four, some two. Numerous fluctuating subgroups probably occur; some strains may even change from one group to the other. Thus, again in common with the meningococcus, it may be said that the gonococcus cannot be classified into fixed serological types like the pneumococcus, the probable reason being that its antigen mosaic is very labile.

Before speaking of the chemical fractions of the gonococcal cell it may be well to bear in mind some facts concerning those of the pneumococcus. The pneumococcal cell whose serological races fall mainly into three types, Types I, II and III, has yielded, upon chemical analysis, two main substances, namely: a carbohydrate and a nucleo-protein. The carbohydrate, polysaccharide in nature, is also the specific soluble substance and is located in the capsule of the bacterial cell. It is this haptene which impresses upon the organism its type-specificity. Moreover, it is generally believed that the presence of capsular material stands in direct relationship to virulence and pathogenicity. The nucleo-protein is, in the main, the carrier of species-specificity.

Another important fact about the pneumococcus which has some relation to our subject is the observation of Stryker on the loss of virulence of pneumococci which had been cultivated in immune serum. It is generally recognized that exposure of the cocci in vitro to immune principles is one of the most effective methods to render virulent pneumococci, avirulent. On this principle may rest the fundamental mechanism of spontaneous recovery from pneumococcal infection and indeed probably also from gonococcal infection. Do we not occasionally see cases of acute gonorrhea which get well "by crisis" so to speak, cases that have been subjected to very little mild treatment, certainly not enough to effect a cure? They seem to "burn themselves out."

Two different chemical fractions have also been described for the gonococcus. Casper, who classifies the organism into two serological groups, has isolated, from both his type-strains, a protein-free, type-specific substance with the property of carbohydrate and also a carbohydrate-free protein. Miller and Boor obtained, on the one hand, a protein-free polysaccharide that was species-specific instead of type-specific and, on the other, a nucleo-protein which resembled the entire organism in its toxicity for mice.

We have previously mentioned the heterophile antigen common to the pneumococcus, meningococcus and gonococcus.

Since the carbohydrate-fraction of the pneumococcus has been definitely identified with the capsular material, it may well be that, although the gonococcus does not possess an apparent capsule, it also contains some capsular-like material in the form of its carbohydrate fraction, which may account for its pathogenicity and virulence. In this connection might be mentioned the belief of Israeli that a capsule may be demonstrated in the gonococcus; and who has not been impressed, at times, by the suspicion of the existence of a capsule in smears of gonorrheal exudates?

Virulence of the gonococcus is

probably a variable quantity. It is well known that the virulence of bacteria can be enhanced by recent animal passages; we believe the same applies to the gonococcus through human passages; we have often noticed that a woman who becomes infected towards the end of the incubation period of her partner's disease develops a severe infection.

As to the gonotoxin we need only mention here that it has long been known that a so-called "endotoxin" can be obtained from the bacterial bodies of the gonococci or from the filtrate of cultures. Its nature is undetermined. There is no actual proof of the existence of a true soluble exotoxin, although some evidence has been advanced that there may be such a thing.

When we come to inquire "How does gonorrhea get well?" we can only speculate. Whether phagocytosis is a benefit or a detriment is a disputed question. It does not seem to take place in the deeper levels of the submucosa where we would expect it to occur, if those very germs responsible for chronicity of the disease were to be destroyed by this process. Phagocytosis is very evident in the superficial layers of the submucosa, the lumina of the mucous channels and in the urethra; but in these localities the phagocytes do not digest the gonococci and seem to act merely as conveyers of the organisms to the outside world, a doubtful benefit, since here the presence of much bacterial protoplasm might have acted as antigen to produce antibody formation at the very place where it is needed.

(*To be continued next month*)

News Items

Dr. and Mrs. R. V. Clifford announce the birth of a son, Robert, on January 17th, 1936.

Dr. and Mrs. E. C. Mylott announce the birth of a daughter, Mary Morris, on March 16th, 1936.

Facts and Fancies in Diet

Always mindful of the ladies, the Postgraduate Day Committee has arranged to have Dr. Walter W. Palmer address the Federation of Women's Clubs on the above named subject. The address will be given at 2:00 P. M., April 30, 1936, in the Butler Art Museum. It is to be hoped that the "Ladies Auxiliary of the Mahoning County Medical Society" will contribute their efforts to the end that an adequate and appreciative audience be present to greet and hear Dr. Palmer.

FACULTY FOR POSTGRADUATE DAY

Dr. Palmer

DR. WALTER W. PALMER

Born, Southfield, Mass., 1892; B. S. Amherst, 1905; Sc. D. Amherst, 1922; Columbia University, 1929; M. D. Harvard University, 1910.

Bard Professor of Medicine, College of Physicians and Surgeons, Columbia University.

Director, Medical Service, Presbyterian Hospital.

Has conducted investigations in acid base equilibrium, metabolism, nephritis and thyroid disease.

DR. ALLEN O. WHIPPLE

Dr. Whipple

Born, Urmia, Persia, 1881; B. S. Princeton University, 1904; Sc. D. Columbia University, 1929; M. D. Columbia University, 1908.

Professor of Surgery, College of Physicians and Surgeons, Columbia University.

Director, Surgical Service, Presbyterian Hospital.

Has conducted investigations in surgery of the pancreas, spleen and gall bladder.

Dr. Atchley

DR. DANA W. ATCHLEY

Born, Chester, Conn., 1892; B. S. Chicago University, 1911; M. D. John Hopkins, 1915.

Associate Professor, College of Physicians and Surgeons, Columbia University.

Associate Attending Physician, Medical Service, Presbyterian Hospital.

Has conducted investigation in acid base equilibrium, nephritis, and circulatory disorders.

DR. ALVAN L. BARACH

Dr. Barach

Born, New Castle, Pa., 1895; College of the City of New York, 1912-15; M. D. Columbia University, 1919.

Assistant Professor of Clinical Medicine, College of Physicians and Surgeons, Columbia University.

Assistant Attending Physician, Medical Service, Presbyterian Hospital.

Has conducted investigations in oxygen and helium therapy.

SECRETARY'S REPORT

The regular meeting of the Mahoning County Medical Society was held March 17, 1936, at the Youngstown Club. About sixty members were in attendance. The small audience was due to the inclement weather and difficulty in travel.

Dr. Soma Weiss gave the essay of the evening. His lecture was a masterpiece. The audience was intensely interested and many questions were asked at the close of the lecture. There is a paucity of literature on this subject and the major portion of the facts presented were the result of extensive research by Dr. Weiss.

There was a meeting of Council in Dr. Fuzy's office March 21, 1936.

The current correspondence was read to members of council. These items were acted upon separately.

Among the letters of correspondence was a letter of resignation of Dr. Sidney McCurdy from the position of "Delegate" to the Ohio State Medical Association and thereby "Council" of the Mahoning County Medical Society.

It is with deep regrets that the Society must accept the resignation of Dr. Sidney McCurdy. His council, ability of arriving at correct decisions, his wisdom, broad experience and pleasing personality is valued highly by those with whom he works. On the other hand we congratulate him for having been selected to the very important position as Director of Medical Division of the Ohio State Industrial Commission. The commission has selected a wise leader and this in turn is an honor to "Mahoning County Medical Society." Dr. McCurdy, we congratulate you.

The Ohio State Medical Association announces that it shall hold a Mid-Year Organization Conference on April 26, 1936. Presidents, Secretaries, Treasurers, Legislative Committeemen, Public Relation Chairmen of all County Medical Societies in the state are invited to attend this meeting with officers and members of Committees of the State Association. This is an innovation in the activities of the state association.

Dr. David Smeltzer explained that should the Bulletin of the Mahoning County Medical Society be sued, each member of the Society would be liable. To forestall this danger it is necessary to incorporate the *Bulletin*. Dr. Smeltzer was authorized by Council to proceed with the incorporation papers.

A note was incorporated in the secretary's report last month relative to immunity from arrest for parking when physicians need to park for a short period of time to obtain supplies, etc. However, it must be understood that this is limited to duties pertaining to professional needs and not extraneous matters.

The following applications for membership to Mahoning County Medical Society were acted on favorably by Council at their last meeting, viz: Doctors Elmer Justin Wenaas, Russell William Rummell, Morris H. Belinky, and Robert Edwin Odom.

Should there be any objections to any of these applicants, present the objections in writing to the secretary of the Society within 15 days.

ROBERT B. POLING.

Return Engagements

Two of the recent speakers before the Medical-Dental Bureau luncheons met with such approval that they have been secured for return engagements.

On April 9th, Rev. Z. Irshay will speak on the subject, "European Politics."

On April 16th, Prof. R. D. Bowers of Youngstown College will discuss "Social Security."

Please notify Dr. Hathhorn if you intend to be present on either or both of these occasions.

The Ninth Annual

POSTGRADUATE ASSEMBLY

of the

Mahoning County Medical Society

Thursday, April 30, 1936

A Course of Lectures by a group from the College of Physicians and Surgeons, Columbia University

DR. WALTER W. PALMER, Professor of Medicine and Chief of the Medical Service, Presbyterian Hospital.

DR. ALLEN O. WHIPPLE, Professor of Surgery & Chief of the Surgical Service, Presbyterian Hospital.

DR. DANA W. ATCHLEY, Assoc. Professor of Medicine & Assoc. Attending Physician, Presbyterian Hospital.

DR. ALVAN L. BARACH, Assistant Professor of Medicine and Assistant Attending Physician, Presbyterian Hospital.

Morning and Afternoon Sessions at Stambaugh Auditorium.

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This extraordinary program by such a well-known group should result in a very large attendance.

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POSTGRADUATE DAY PROGRAM

MORNING SESSION

9:00 a. m. The Nephrotic Syndrome. Dr. Dana W. Atchley.

10:00 a. m. Therapeutic Use of Helium in Asthma and Obstructive Lesions in the Larynx and Trachea. Dr. Alvin L. Barach.

11:00 a. m. Thyroid Function and the Low Basal Metabolic Rate. Dr. Walter W. Palmer.

AFTERNOON SESSION

2:00 p. m. Recent Advances in Surgery of the Pancreas. Dr. Allen O. Whipple.

3:00 p. m. The Role of Peripheral Circulatory Failure in Medicine. Dr. Dana W. Atchley.

4:00 p. m. Recent Advances in the Treatment of Pulmonary Oedema, Cough and Dyspnoea. Dr. Alvin L. Barach.

DINNER, YOUNGSTOWN CLUB, 6:00 P. M.

EVENING SESSION

8:00 p. m. The Medical and Surgical Treatment of Thrombocytopenic Purpura. Dr. Allen O. Whipple.

9:00 p. m. Problems in the Medical and Surgical Treatment of Hyperthyroidism. Dr. Walter W. Palmer.

The Evening Session at the Youngstown Club is both scientific and social. All the recreational features of the Club are yours to enjoy.

POSTGRADUATE COMMITTEE

Dr. M. W. Neidus, *Chairman*
Dr. J. D. Brown
Dr. J. A. Heeley
Dr. S. J. Klatman
Dr. L. W. Weller
Dr. F. F. Monroe
Dr. T. K. Golden

Address all communications to Dr. M. W. Neidus, Home Savings and Loan Building, Youngstown, Ohio.

MEDICAL FACTS

By J. G. B.

In a discussion of a case that died recently at the Massachusetts General Hospital, of a carcinoma of the left upper bronchus with metastasis to the liver (both the x-ray men and the clinicians missed the primary lesion), the following points were brought out:

"Change in bowel habits very frequently is the first symptom in cancer of the gastrointestinal tract and may precede any other symptoms by months."

"Most patients with pancreatic cancer if they have pain at all tend to have it in the back."

"The fact that he was drowsy might, however, indicate that he was cholemic, whatever that means. It may mean only that he was dehydrated and pretty sick. The lips were cracked either from fever or dehydration."

"The enlargement of the heart is not surprising in view of the fact that he is sixty."

"It is a very difficult thing to be sure of nodules (in the liver) and the examiner is usually wrong when he says they exist. They are occasionally felt and described but usually are subcutaneous rather than hepatic nodules."

"It is difficult particularly for the average man on the medical ward to be sure he is feeling the gallbladder. We are not accustomed as the surgeons are to feeling the gallbladder."

"It should be stated that in the absence of pain, and in the presence of jaundice and a palpable gallbladder the cause is probably malignancy."

"The sedimentation rate is about three times the normal. It is not diagnostic in any sense, coming with infection or with parenchymatous changes in one organ or another. It simply indicates how much cellular disturbance there is. It is important because, if surgery is to be considered, here is a patient who represents a real risk from spontaneous bleeding."

"If the gallbladder is palpable it suggests cancer of the head of the pancreas more than anything else."

"Metastatic disease in the liver rarely produces evidence of liver disease until it is diffusely spread through the entire organ."

"Almost always if there is cancer of the gallbladder there is apt to be a preceding story of gallstones."

"I was quite interested in looking up one or two cases of so-called acute yellow atrophy to find one where there had been stone in the common duct with complete obstruction and death from prolonged jaundice with typical histologic findings of central necrosis in the liver. In other words, obstruction as such may produce the clinical picture of acute yellow atrophy."

"Some of the films show the duodenal loop fairly well and that does not seem to be enlarged. A few cases of cancer of the pancreas show a wide loop. This is some evidence against the pancreatic tumor."

"A new diagnostic procedure—peritoneoscopy, which is new to this hospital—was used with very satisfactory results. . . A half inch incision is made, a very small trocar inserted and air blown into the peritoneal cavity. Then a larger trocar is used and a puncture made, after which the bistoury is removed and the observation telescope inserted. This is an instrument very much like the cystoscope except it has direct instead of right angle vision. It is equipped for biopsies. A special attachment can be introduced and a small biopsy taken. There is another part for withdrawing fluid. This cage-like affair is to keep the omentum away from the

instrument and prevent its getting caught. A rubber tube with a light on the end can be introduced so that you can see the stomach and inflate it at the same time. In this patient I obtained a very good view of the liver in which I saw definite nodules throughout, having the characteristic appearance of carcinoma, probably metastatic."

"When we explore inoperable malignancy we have a very high mortality from the exploration."

Personal Items

Dr. Sidney M. McCurdy, 19 Lincoln Ave., has been appointed medical superviser of the Industrial commission for the State of Ohio. He will assume his new duties on March 2. Eventually he expects to make his home in Columbus. We congratulate Dr. McCurdy on his new appointment, but we are very sorry to see him leave Youngstown.

Dr. H. C. McClenahan addressed the Kiwanis Club of Hubbard, January 17, on the subject, "Sterilization for Betterment of the Race." He also addressed the Men's Club of the M. E. Church of Hubbard on the same subject.

Dr. C. W. Sears, associate of Dr. McClenahan, is doing postgraduate work in obstetrics at the Margaret Hague Maternity Hospital, Jersey City. He expects to return to Youngstown about August 15.

New members of the staff of the Youngstown Hospital appointed at the meeting of the executive committee in January includes Drs. A. W. Miglets, pediatrics; J. C. Hall, medicine; J. R. Buchanan, orthopedics; C. W. Sears, obstetrics; S. W. Weaver, neurology; C. A. Gustafson, surgery; L. H. Moyer, obstetrics.

Dr. S. H. Sedwitz addressed the Trumbull County Medical Society, February 20, on the subject, "Peripheral Vascular Diseases."

THE POLITICAL HORIZON

Let all eyes be turned, not to the Ides of March, but to May 12, 1936. On that date, seekers for the nominations for county and state officers, and for seats in the 92nd general assembly will be up for nomination. Some old and familiar names will be presented and many new ones will appear.

The former office holders have left their record behind them; and, for the information of the members of the Society, we will print in the May issue of the *Bulletin*, the nature of the vote cast by each on matters pertaining to the medical interests in the state.

The new-comers in the field of politics constitute, to some extent, an unknown factor. To minimize this somewhat, our Legislative Committee will keep informed of the new nominees, interview them, and acquaint the Society with their qualifications for office and of their attitude to matters, medical.

This information will be passed along to the membership as the time draws nigh to the election in November. In times such as these, confronted as we are by every conceivable type of political experimentation, "eternal vigilance is the price of safety."

St. Elizabeth's Hospital Annual Report

Patient Days	1935	1934
Medical	17 164	6,531
Surgical	25,748	29,099
Obstetrical	4,891	3,924
New Born	4,732	3,897
Totals	52,535	43,451
Average patients per day	152	119
Average days for each patient	10.9	10
X-Ray Department	1935	1934
Number of patients	3,435	2,421
Number of films	6,048	5,628
Number of treatments	445	202
Number of fluoroscopies	886	758

The x-ray department has been moved from the basement to the first floor in the A. wing. New deep therapy equipment has been installed; also equipment for biplane fluoroscopy.

Operations........Major, 1,158; Minor, 1,064

Patients delivered, 578; Babies born, 589

Autopsies on institutional deaths........30%.

"Postgraduate Day" Personnel

from the

College of Physicians and Surgeons
Columbia University

and the

Presbyterian Hospital
New York City

DR. WALTER W. PALMER, Professor of Medicine

DR. ALLEN O. WHIPPLE, Professor of Surgery

DR. DANA W. ATCHLEY, Associate Professor of Medicine

DR. ALVIN L. BARACH, Assistant Professor of Medicine

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Dr. J. N. McCann
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Dr. Henry Sisek

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Dr. F. F. Monroe
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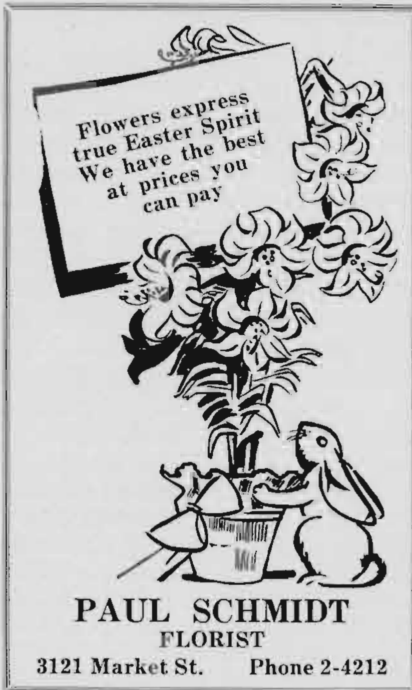
SCARLET FEVER IMMUNIZATION

Scarlet fever is a disease in which every general practitioner of medicine should be interested. There were 797 cases of scaret fever reported in Youngstown last year, with a mortality of 6 cases. More than 200,000 cases are reported annually in the United States. The mortality does not truly represent the serious nature of the malady. Probably none of the other contagious diseases are followed by complications of a serious nature which may result in permanent handicaps as is scarlet fever.

We are aware that objections have been made against scarlet fever immunization. We think that the combined results of men who have had practical experience with scarlet fever immunization should out-weigh the theoretical objections of those who have had no practical experience with the method. Every discovery in medicine which advocates radical departures from accepted methods must prove itself through an experimental period by those who are most interested and have opportunities to test the discovery. The rank and file of the profession will then sooner or later accept and use the discovery. It is almost twenty years since Schick announced his test for diphtheria and the method of immunization and only recently has diphtheria prevention been accepted by the profession and the public. It took much longer for Jenner to convince the world that smallpox can be prevented by vaccination.

The objections advanced against scarlet fever immunization are that it is too expensive, that it is dangerous and that the reactions are too severe, and that the protection is of short duration. It is more expensive than diphtheria immunization, but it is not prohibitive in cost and there are many people who are willing and glad to pay for this service if it is safe and efficient. Dr. Dick states that he has record of active immunization with graduated doses of sterile scarlet fever toxin in 13,775 susceptible persons with no injury in any instance. In three institutions, urine analysis were made before, during and after immunization. There were no evidences of nephritis caused by the immunization. Some persons who had nephritis were immunized without causing an exacerbation of the condition. In a large series, including highly susceptible persons, general reactions may be expected after each dose in about 10 per cent. But this 10 per cent. is not composed of the same individuals after the different doses. The most highly susceptible persons usually react more strongly on the first doses; others may not have any reactions until the fourth or fifth dose is given. As a rule, reactions until the fourth or fifth dose is given. As a rule, reactions after the last and largest dose are fewer and milder than after the smaller first doses. The most frequent symptom found after the injection of toxin is vomiting. It usually occurs in about 1 per cent. following the first dose, 10 per cent. following the second dose; 25 per cent. following the third dose; 11 per cent. following the fourth dose; and 5 per cent. following the fifth dose. Most of these cases have fever for 24 hours, but in no case were there any alarming symptoms. The immunizing doses should be accurately graduated and given in proper sequence. But mistakes have been made in which the last dose has been injected as the first dose and no fatalities have occurred. Experimentally, Dr. Dick has injected as much as 20 cc. of undiluted toxin containing nearly 1,000,000 skin test doses, without causing injury and without producing nephritis in human beings. The largest of the 5 immunizing doses is 80,000 S. T. D. Very severe reactions have followed by use of material produced by manufacturers who



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were not licensed by the Scarlet Fever Committee.

With regard to duration of reactions and disability resulting therefrom, Thomson states that in 1933, in 5 Gary, Illinois, school centers with an enrollment of 13,582 children, 324 pupils lost 281½ days because of reactions from scarlet fever immunization—an average of seven-eighths of a day. Horan, summarizing 4½ years' experience at Cranbrook School, Michigan, with an enrollment of 200 boys 14.6 years of age, all of whom were Dick-tested, found a slightly lower average of two-thirds of a day.

Scarlet fever itself will not immunize in 100 per cent. of the cases. Consequently, a few persons will have scarlet fever two times. It is, therefore, too much to expect that immunization with toxin will successfully immunize in 100 per cent. of cases. According to Dick, the 5 or 6 doses recommended "may be counted on to immunize completely 96 per cent. of susceptible persons, and to modify considerably the susceptibility of the rest." In statistics collected by Dick, it has been shown that no cases of scarlet fever have occurred among 12,182 susceptible persons immunized in institutions where scarlet fever was epidemic. Similar results have been observed in 2,805 susceptible nurses and internes immunized before they began work in contagious hospitals. Of 298 nurses who received a complete set of immunizing doses at Cook County Hospitals, none developed scarlet fever, whereas during the same period there were 15 cases of scarlet fever among nurses who had not been immunized, and 8 among 112 nurses who had not been tested.

Dr. Dick states, "The reliability of the skin test in determining susceptibility to scarlet fever is accepted. Our own experience of the past ten years comprises 24,000 persons having spontaneously negative reactions, who have passed through one epidemic and some through several epidemics without

contracting scarlet fever. The most severe test of the reliability of the skin test is found in a group of more than 4,000 pupil nurses and internes with spontaineous negative skin tests, who were allowed to go on duty in contagious disease wards without immunization. Despite long and intimate exposure none of this group contracted scarlet fever. Retests made at intervals of three, four, and six years in spontaneously immune groups show that the skin test remains negative except in newborn infants, who frequently show negative skin reactions which become positive during the first year of life.

The technique of the skin test (quoting from Dr. Dick) for susceptibility to scarlet fever is exacting. Among the more common sources of error are: inadequate syringes and needles; attempts to sterilize the syringes and needles with alcohol which precipitates the minute amount of toxin in the skin test solution; dilution of the toxin with water left in the syringes and needles after boiling; sterilization in alkaline tap water instead of distilled water; estimation of the amount of skin test solution injected by the size of the wheal produced instead of accurate measurement by graduations on the syringe; subcutaneous instead of intracutaneous injection; and failure to observe the reaction between 20 and 24 hours after the test is made. Slightly positive reactions are frequently interpreted as negative. This tendency may be due to familiarity with the Schick test, which is usually interpreted as negative unless indurated; when induration is present, it is usually the result of infection from the skin or contaminating material, or it may be due to excessive amount of protein in the toxin solution.

Still quoting from Dr. Dick—"In making the skin test, the exact dose is injected intradermally on the flexor surface of the forearm at the junction of the upper and middle-thirds. The

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reaction should be observed in a bright light, 20 to 24 hours after the test is made. Observations made later than 24 hours are not reliable. The slightest flush or reddening, no matter how faint the color, constitute a positive reaction, if it measures as much as 10 mm. in any diameter."

"The doses of sterile toxin for active immuniation should be graduated beginning with 500 skin test doses in the first injection and increasing to 80,000 or 100,000 S. T. D. in the last. The injections are made subcutaneously at intervals of one week. If the full amount is given in each dose, the five doses may be counted on to immunize completely 95 per cent. of susceptible persons, and to modify considerably the susceptibility of the rest. Two weeks after the last dose is given, another skin test is made, using 0.1 cc. of the skin test solution or one skin test dose in the right arm and 0.2 cc. or two S. T. D., on the left arm. If the reaction on either arm is positive, the fifth dose is repeated.

"Unless the immunization is carried to the point of a negative skin reaction, complete protection against scarlet fever cannot be expected, although the severity of a subsequent attack may be modified by the partial immunization."

"The duration of active immunity, as well as the degree of immunity, depends on the amount of toxin injected. Retests made at intervals of one, two, three, five and six years indicate that more than 90 per cent. of those immunized to the point of a negative skin reaction retain their immunity. Between 5 and 9 per cent. slip back and require a second immunization."

A committee from the Nurses Training School of the Youngstown Hospital Association voted to Dick test all the girls of the class entering last September and to immunize those who had positive Dick tests. The girls who showed positive tests were

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given the five graduated doses of toxin at weekly intervals. Two weeks after completion of the injections they were again Dick tested and all found to be negative.

Reactions during immunization varied, some nurses showed no reactions whatever. Others experienced, especially on the third dose, nausea and vomiting, fever up to 101 degrees, with general body ache and discomfort. All reactions were over within 48 hours. At no time were there any alarming symptoms. Some nurses found it necesssary to stay off duty for a day following the injection.

The nurses of the upper two classes were also Dick tested. About 20 per cent. were found to be positive. These girls will be immunized at a later date.

In private practice we have found that positive reaction to the Dick test in early school age is almost 100 per cent. This susceptibility depends on how much exposure the patient has had to the streptococcus germ. In closely crowded districts the incident of susceptibility will therefore be less. Patients of early school age also show less reaction to the toxin.

It is, of course, too early to predict the success of Scarlet Fever immunization in Youngstown, but we believe that it deserves the serious consideration and support of the Medical profession.

C. A. GUSTAFSON

DIPHTHERIA IMMUNIZATION

By E. H. NAGEL, M. D.,
Chairman of the Public Health Committee

At a meeting of the Public Health Committee February 9th, 1936, it was recommended that the diphtheria immunization of the pre-school children of Mahoning County be continued this year, and that a short, intensive campaign be undertaken to immunize these children and, also, educate the public as to the value of immunization against diphtheria.

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This campaign will be instituted April 20 and extend to May 4 inclusive.

The following points should be noted:

1. That every child over 6 to 9 months of age should be given one dose of alum precipitated diphtheria toxoid.

2. That toxoid may be obtained at the city Board of Health free of charge for all cases, both indigent and pay.

3. That you may obtain cards from the Board of Health at the same time that you obtain the toxoid.

4. That you must return the cards by mail to the Board of Health for each immunization given.

5. That those who are unable to pay must sign the card.

6. That City Council has appropriated $2,000.00 to pay you at the rate of 50 cents each for immunizing those who are unable to pay.

7. That the County Board of Health will supply toxoid free of charge for all county cases, but has no appropriation for paying the doctor.

POSTGRADUATE DAY

In last month's issue of the *Bulletin* our President appealed to you for co-operation in making this, our ninth Postgraduate Day, the success it should be. The Program Committee, as in the past, has furnished us with a group of speakers, which I feel sure not one of us can afford to miss.

The Postgraduate Day Committee, each and every one of them, have labored diligently, attending to the numerous necessary details, in order to provide for your comfort and edification. All the officers have given unselfishly and unstintingly of their time to make this meeting as successful, and if possible more successful, than previous ones. But all of these efforts will fall short of the desired goal unless each and every member of the Society does his part.

We have a membership of over 200 physicians, and in order to assure the success of this meeting, every member should register. It's needles to remind you that the expense entailed, is enormous. Unanimous attendance is a moral obligation that we owe to the Society.

We are indeed honored and flattered by the great number of out-of-town men who come here for this meeting. Considering the large groups that come from Pittsburgh and Cleveland and others who travel 200 miles or more for our meeting, it should behoove each and every one of us to attend our own Postgraduate Day!

Thursday, April 30th, is the date and we might begin now to arrange our work so that nothing will conflict with our attendance at the sessions that day. I feel sure that nothing will please the men who have worked for the success of that day, more than a record attendance by the local members.

JOSEPH ROSENFELD,
Chairman of the Publicity Committee.

Ohio State Medical Association Activities

The mid-year organization meeting will be held at the Deshler-Wallick Hotel in Columbus, Sunday, April 26, 1936. Presidents, Secretaries, Treasurers, Legislative Committeemen and Public Relations Chairmen of all county societies are invited.

A four-point program is contemplated.

(1) Discussions of the serious questions confronting the medical profession and medical organization.

(2) Exchange of views and ideas on activities which are being, or can be, carried on by local medical societies.

(3) Better acquaintance with the activities of the State Associations.

(4) Round table conferences on mutual problems.

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our State Association activities. Mahoning County should be represented, and it is to be hoped that our elected officers and the chairmen specified will be present at this meeting. We are an integral part of the state organization, and it is only by participation in such movements as this, that we can hope to be of benefit to and be benefitted by, the State Association.

OUR NURSES

Miss Mathilda Marquison, R. N., graduate of St. Elizabeth's Hospital School of Nursing, Postgraduate of Grace Hospital School of Anæsthesia, Detroit, Mich., has accepted a position at St. Francis Hospital in Pittsburgh, Pa.

Miss Hazel Code, R. N., graduate of St. Elizabeth's Hospital School of Nursing, Postgraduate of Surgery of Bellview Hospital, New York City, has accepted a position at Crile Clinic.

Miss Helen M. Brislane, R. N., President of St. Elizabeth's Hospital Alumnae Association, was appointed by District No. 3 of Ohio State Nurses Association as District Representative to Mahoning County Medical Relief Commission.

The Educational Section of District No. 3 of Ohio State Nurses Association of which Miss Ethel M. Hopkins is Chairman, met at Tod Nurses Home, Youngstown Hospital, Thursday, March 19th, with Mrs. Edward MacDonald, President of Youngstown Federation of Women's Clubs as guest.

PRESS CORRESPONDENT.

SPEAKERS' BUREAU

The following doctors spoke over WKBN during the month of March, 1936:

March 3—Dr. Walter J. Tymochko, on "Laennec the Listener."

March 10—Dr. John R. Buchanan, on "Orthopedics."

March 17—Dr. W. W. Ryall, on "Syphilis."

March 24—Dr. T. K. Golden, on "Patent Medicines."

March 31—Dr. P. J. McOwen, on "Some Facts about Moles."

Dr. Wm. Skipp spoke to the Hillman P. T. A., March 5, 1936, on "Endocrinology."

Dr. P. J. McOwen spoke to the Parent-Teachers Association at the Warren-Harding School, Warren, Ohio, March 12, 1936. The subject, "Adolescence Skin Diseases."

Dr. Julia March Baird gave a 15-minute broadcast, for the Business and Professional Women's Club, Monday, March 16, 1936. The subject, "Is There Room for Women in Medicine."

PROGRAM FOR STAFF MEETINGS

St. Elizabeth's Hospital 1936

St. Elizabeth's Hospital Program for Staff meetings for the year of 1936. Meetings are held on the second Tuesday of each month excepting July and August, at 8:30 p. m., at the hospital.

Jan.—Appendicitis — Doctors P. L. Boyle, J. M. Ranz, F. W. McNamara, and L. Shensa.

Feb.—Leukemia—Doctors P. J. Mahar, J. Colla, M. M. Szucs, and I. C. Smith.

March—Recent Advances in Hematology—Doctor J. G. Brody.

April — Arthritis — Doctors A. M. Rosenblum, M. W. Neidus, and T. K. Golden.

May—X-Ray Studies of the Gastro Intestinal Tract — Doctors J. H. Heberding and S. J. Tamarkin.

June—Poliomyelitis and Its Deformities — Doctors B. B. McElhaney, C. S. Lowendorf, and J. B. Birch.

Sept.—Jaundice and Its Relation to Gall Bladder Disease—Doctors L. G. Coe, J. M. Ranz, and A. Marinelli.

Oct. — Endometriosis and Disturbances of Menopause — Doctors J. B. Nelson, E. J. Reilly, and P. L. Boyle.

Nov.—Recent Advances in Surgery of the Sympathetic System — Doctors F. W. McNamara, A. Marinelli, and J. N. McCann.

Dec. — Sinusitis — Doctors W. H. Evans, E. C. Mylott, and S. R. Cafaro.

Clinical, pathological and x-ray conferences are held every Friday at 11 a. m.

Combined orthopedic rounds are made every Wednesday at 9 a. m.

The Internes of St. Elizabeth's Hospital entertained the Staff at a smoker in their home on March 7th. A large number of the staff attended and enjoyed themselves thoroughly.

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Mead's Oleum Percomorphum makes it possible to prescribe natural vitamins A and D in the same ratio as they occur in cod liver oils*—but in drops dosage rather than in teaspoonfuls. Consisting of equal volumes of percomorph liver oil and cod liver oil, this product is so potent that it can be given in 1/100 the dosage of cod liver oil.* Each gram supplies not less than 60,000 vitamin A units and 8,500 vitamin D units (U. S. P).

Convenient to Prescribe

Realizing that physicians are accustomed to the decimal system, we have blended Mead's Oleum Percomorphum to a potency 100 times that of U. S. P. cod liver oil, which has a vitamin A content of 600 units and a vitamin D content of 85 units. For physicians who prefer cod liver oil we have also prepared Mead's Cod Liver Oil Fortified With Percomorph Liver Oil (5% percomorph liver oil) having a vitamin content 10 times cod liver oil.* Thus the physician can conveniently prescribe vitamins A and D in any required dosage, in convenient ratio to an acceptable standard cod liver oil.

Greater Economy per Dose

The pioneer work done by Mead Johnson & Company in improving the quality of cod liver oil is too well known to need reiteration. The accompanying chart, however, shows how successfully we have striven, all through the depression, to reduce the cost of vitamins A and D to the patient. All factors concerned in the production and marketing of Mead's Oleum Percomorphum are under our control. We are hopeful that by wholehearted endorsement of these new Mead products, the medical profession will make it possible for us, during the next few years, to make the patient's "vitamin penny" stretch still further.

Sale Introduced	MEAD'S VITAMINS A-D PRODUCTS, APPROXIMATE COST TO PATIENT, 1000 D UNITS	
1924	MEAD'S COD LIVER OIL *(old)*	2.31 CENTS
1934	MEAD'S COD LIVER OIL *(new)*	1.31 CENTS
1931	MEAD'S COD LIVER OIL WITH VIOSTEROL	1.29 CENTS
1932	MEAD'S VIOSTEROL IN HALIBUT LIVER OIL	0.95 CENTS
1935	MEAD'S COD LIVER OIL FORTIFIED WITH PERCOMORPH LIVER OIL	0.88 CENTS
1935	MEAD'S OLEUM PERCOMORPHUM	0.83 CENTS

Mead's Oleum Percomorphum, 50%, is available in 10-drop capsules, 25 in a box; and in 10 and 50 cc. bottles. Mead's Cod Liver Oil Fortified With Percomorph Liver Oil is available in 3 and 16 oz. bottles.

*U. S. P. XI Minimum Standard

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons.
Mead Johnson & Company, Evansville, Ind., U. S. A.