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# The Differential Diagnosis of Jaundice In Twelve Questions\*

J. O. Godden, M.D.

ACCORDING to Popper<sup>1</sup>, clinical observation alone will provide the correct diagnosis in liver disease with the following degrees of confidence, infectious hepatitis 86%, toxic hepatitis 57%, cirrhosis with jaundice 77%, cirrhosis without jaundice 83%, benign obstruction 55%, malignant obstruction 74%. A well taken history is the most productive part of any system of clinical observation. Starting with the postulate of Ingelfinger<sup>2</sup>, "Let us assume that the patient is more than 5 years of age; this eliminates the somewhat different problem of jaundice in infancy. Let us also assume that the patient presents jaundice as an essential and major feature of his illness, and that jaundice is not a secondary feature of a recognized pre-existing illness. This eliminates jaundice appearing in patients with (a) obvious congestive heart failure, (b) postoperative complications including shock and need for repeated transfusions, (c) manifest carcinomatosis and (d) overwhelming sepsis or toxemia as a result of extrahepatic and extrabiliary disease. In the remaining cases of jaundice, the chances are over 90% that the cause will be found among the Big Five of jaundice: viral hepatitis, drug hepatitis, cirrhosis, gallstones and malignant obstruction of the common duct. If the patient is between 5 and 35 years of age, moreover, viral hepatitis by itself accounts for 90% of the cases. In a case of viral hepatitis, drug hepatitis, cirrhosis or gallstones, circumstantial evidence may provide the major clue for incriminating the offender. The evidence, however, does not drop in one's lap; it has to be extracted by searching and specific questions." The twelve questions that follow are a useful part of such an enquiry.

**Question 1.** Has the patient had a needle inserted into him, up to six months before (average time three months) before the onset of his jaundice, for the purpose of injecting human serum or plasma?

Comment: In descending order of guilt comes whole blood, all products of human blood (except gamma globulin and purified albumin) and even topical thrombin or fibrin. Less likely, but occasionally responsible, are the dentist's anesthetic block, parenteral liver or vitamins, the narcotic addict's surreptitious 'shot' or the itinerant tattooer's needle.

**Question 2.** Was the patient exposed, within six weeks preceding the onset of jaundice, to a case of infectious jaundice?

**Question 3.** Was there flue-like prodrome lasting 1-5 days prior to the development of the jaundice?

Comment: The prodromal symptoms, irrespective of their nature, are especially significant if sharply demarcated from a preceding period of normal health. For example, skin rashes and arthralgia, although occurring in only 5% of cases, are of the highest diagnostic significance.

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**Question 4.** Has the patient in the three months preceding the onset of jaundice been exposed to any of the following drugs especially chlorpromazine (largactil) and iproniazid (marsilid)? Much less commonly nilevar, methyltestosterone, cincophen, phenurone, isoniazid are responsible and even more rarely PAS, some sulfanilamides and thiourea.

**Comment:** Drug hepatitis produces symptoms a few days before jaundice appears, fever, nausea and vomiting may be striking. Most of these agents are extremely unusual except chlorpromazine and marsilid. Exposure to certain toxins such as carbon tetrachloride may occur when the patient is acutely inebriated. Ordinary and sporadic cleaning of cloths with carbon tetrachloride-containing materials is probably a rare cause of toxic hepatitis.

**Question 5.** Does the patient have a history of prolonged and heavy alcoholism? (especially if questioning demonstrates that the excess consumption of alcohol is accompanied by deficient and irregular intake of food).

**Comment:** Non-alcoholic forms of cirrhosis presumably are the result of some insult to the liver sustained because of viruses, parasites, toxins or unknown agents. Paradoxically, a history suggesting a previous hepatic insult is usually not obtainable in patients jaundiced because of post-necrotic cirrhosis.

**Question 6.** Does the patient have a past history suggesting episodes of biliary colic?

**Comment:** Typical biliary colic is a severe pain starting epigastrically or in the right upper quadrant, mounting to maximum intensity in the course of five to ten minutes, persisting from 15 to 45 minutes and radiating through to the right scapula. If a painful episode of this type precedes the onset of jaundice within a period of three to seventy-two hours and the patient has previously felt well the chances are 95% the gall stones are responsible for the icterus. Pseudogallstone colic does occur with cirrhosis and hepatitis but is relatively uncommon. Cancer almost never produces typical biliary colic. Biliary colic followed by jaundice may be closely mimicked by the occasional case of pancreatitis that is unrelated to gall stones but produces jaundice by compression of the common duct.

**Question 7.** If the patient had biliary tract surgery was the surgery difficult or was it followed by jaundice, fever, or unexpected external biliary drainage?

**Comment:** Under these circumstances injury of the common duct with subsequent stricture formation may have taken place. If so, any resultant cholangitis and jaundice should appear within one year of surgery.

**Question 8.** Did the patient have an honest-to-goodness, bed shaking, teeth rattling chill?

**Comment:** If the patient has a real shaking chill, as defined above, preceding the onset of jaundice the chances are that the patient has cholangitis produced in most cases by a common duct stone. These chills are usually accompanied by biliary colic. In some 10% of patients jaundiced because of choledochal obstruction particularly those in the older age group the jaundice may be "silent" or accompanied by ill defined distress.

**Question 9.** Did the patient have definite fever?

**Comment:** Unless cholangitis is present as a complication, choledocholithiasis with jaundice does not cause fever. Jaundice produced by neoplastic



obstruction of the common duct and by cirrhosis is often afebrile. Certain cases of hepatitis particularly those produced by the virus of homologous serum hepatitis are often afebrile. Conversely gall stones, viral and drug hepatitis and certain cases of "active" cirrhosis may exhibit temperatures ranging between 99 and 103.

**Question 10.** Does the patient have itching?

Comment: Ideally itching should characterize obstruction of the common duct but not liver disease. However some 25% of patients with choledochal obstruction do not itch and some 10% of those with liver disease do. Patients with intrahepatic cholestasis due to drug sensitivity are understandably prone to pruritus. If drug ingestion can be excluded severe unremitting itching with excoriations in a jaundiced patient (especially if it preceded the jaundice) suggests obstruction of the hepatic or common duct.

**Question 11.** Is there any absence of, or paucity of, symptoms featured above?

Comment: Jaundice appearing gradually, painlessly and without other clear-cut symptoms in an elderly patient who has not been exposed to needles or drugs is (until proven otherwise) jaundice produced by a neoplasm invading or compressing the common duct.

**Question 12.** Does the patient have spider angiomas, liver palms, or other extra hepatic evidences indicative of liver disease?

Comment: 'Spiders' (dusky red spots with their net of radiating vessels) are characteristically found above the clavicles or on the arms or hands. A few spiders may be found in people in good health. Numerous spiders, particularly if observed to appear during jaundice indicate liver disease. The only other common cause is pregnancy. The finding of ascites means advanced liver disease in the absence of right heart failure, carcinomatosis ovarian carcinoma or primary liver cancer. Hepatic coma (lethargy, drowsiness, confusion, liver flap, frank coma, and hepatic fetor) means severe primary liver disease in patients with jaundice for one month or less. Liver palms (an intense mottled blush surrounding a pale yellow center) is indicative of primary liver disease if the patient is not a victim of chronic malnutrition. Splenomegaly: an enlarged spleen in a jaundice patient indicates liver disease as opposed to obstruction of the common duct in 90% of the cases. These extra hepatic manifestations of liver disease are by and large characteristic of severe hepatitis or cirrhosis and rarely attend other major cause of jaundice unless the process is advanced.

#### REFERENCES

1. Popper, H. et al. Correlation of Liver Function and Liver Structure: Clinical Application, *Am. J. Medicine.* 6:278, 1949.
2. Ingelfinger, F. J. Differential Diagnosis of Jaundice: *Disease-A-Month.* November, 1958.

# Use of the "Lytic Cocktail" With Body Cooling In A Small Hospital:

## A REPORT OF THREE CASES

D. T. Janigan, L. Kristal and D. S. Nathanson  
New Waterford, Nova Scotia

THE term "lytic cocktail" refers to a combination of drugs, chlorpromazine (CPZ), phenergan and demerol, which has been widely used in Europe and, to a lesser extent, in America in the prevention and treatment of hemorrhagic, traumatic and operative shock. The mixture may be employed with or without the production of hypothermia by body cooling.

This report offers nothing new to the literature, nor does it allude to uniqueness. However, we feel justified in reporting our experiences with the method to impart the opinion that the procedure need not be regarded by the rural practitioner as too technical and complicated, and as belonging to the realm of the large centres and specialists. Such a complex is all too common. It is admitted, however, that we too suffered from this complex until, as a last resort in the treatment of a case of severe traumatic shock one of us (D. J.) suggested and employed this method of therapy. Our initial success with the "lytic cocktail" prompted us to use it in two subsequent critical situations.

### BRIEF REVIEW OF THE LITERATURE

The immediate response to hemorrhage or intravascular fluid loss is vasoconstriction. This is generally regarded as beneficial; however reports cast some doubt on the overall efficacy of the sustained vasoconstrictor response which is mediated, chiefly, by the sympathetic nervous system: (a) experimentally, freeing the body from the influence of the nervous system, the number of deaths following extensive surgical procedures were significantly reduced. High spinal, high transection of the cord and bilateral thoracolumbar sympathectomy in dogs produces a definite resistance to traumatizing procedures (1-3); (b) hypotension per se obtained by blocking sympathetic pathways does not result in irreversible shock (5); (c) low blood pressure can be tolerated for long periods of time during deliberate hypotension during anesthesia.<sup>4</sup>

Such studies prompted the belief that the nerve mediated vasoconstrictive response to injury was a factor in irreversible shock. Irreversible shock has been produced by prolonged intravenous injections of epinephrine in dogs which has not suffered blood or fluid loss.<sup>6</sup> The survival of dogs following high spinal cord transection in spite of the resultant low blood pressure, was attributed to adequate tissue circulation as a result of the vasodilation. In shock, the maintenance of blood pressure by vasoconstriction reduces much of the capillary circulation; thus some postulate that toxic tissue metabolites result from hypoxia and that these metabolites are factors in the production of the phase of irreversible shock.<sup>13</sup>

The sympathetic nervous system is also known to set off a well-known chain of events involving the pituitary-adrenal axis: briefly and simply, release of adrenaline stimulates the pituitary to release adrenocorticotrophin (ACTH) via the hypothalamus, with resultant stimulation of the adrenal



cortex. If prolonged, cortical lipid depletion, as measured by decreased ascorbic acid content, ensues corresponding roughly to Selye's so-called "stage of exhaustion."

In summary, experimental evidence suggests that sustained vasoconstriction is not entirely a beneficial response to hemorrhage; that it may produce irreversible damage through tissue anoxia; that vasoconstriction is mediated through the sympathetic nervous system which if blocked is associated with significant protection against irreversible shock; and that adrenal cortical depletion may occur with prolonged stress responses.

With these experimental concepts in mind, Laborit and Hugenard<sup>14</sup> sought to attain a "balanced paralysis" of the autonomic nervous system to eliminate the reactions to stress. It seemed ideal to employ CPZ and phenergan since together this desired effect could almost be achieved. CPZ is adrenolytic and produces vasodilatation and hypotension; it facilitates the production of hypothermia by surface cooling and a reduction in tissue oxygen consumption with this drug has been reported. It is a weak central depressant but potentiates the action of anaesthetics and analgesics. Pharmacologically, phenergan is somewhat less protean and is an antihistamine that is weakly parasympatholytic.

The combination of CPZ and phenergan thus serves, broadly speaking, as an autonomic and central nervous system depressant, and combined with demerol (which serves to attenuate the central nervous system response to pain) it has been called the "lytic cocktail." It produces a state in man, which is neither sleep nor coma and which has many similarities to that of a hibernating animal. Besides modifying the various responses to stress, the mixture curbs hypermetabolism; reduces body temperature to produce a state of hypometabolism. Thus the state produced has been termed by the French as "artificial hibernation."

The experimental and clinical results with these drugs are attractive: (a) rats treated with CPZ and subjected to hemorrhage or trauma showed a significant longer survival time than a control group<sup>7</sup>; (b) after severe hemorrhage in dogs, the intravenous injection of 2 mg./Kgm. of CPZ provided complete protection against shock which carried an 83% mortality in non-treated dogs<sup>8</sup>; (c) after the intravenous infusion of the LD50 dose of adrenaline, an 80% mortality was obtained in dogs. After pretreatment with CPZ, only a 20% mortality resulted after an infusion of adrenaline 25 times greater than the LD50; (d) CPZ alters the adrenal response to ACTH and stress as indicated with a prevention of cortical ascorbic acid depletion<sup>9</sup>.

In man only a few of many communications will be cited. After Laborit's initial applications many reports appeared.<sup>10</sup> French casualties in the Indo-china war were given CPZ prior to evacuation with good results. Many were purposely cooled while in flight in air transports. The collected papers of the Proceedings of the World Congress of Anaesthesiologists in 1955 reveal the wide and successful application of this method in the treatment of shock: six cases of severe burns, second and third degree involving 40 to 70% body area; severe crush injuries from mine accidents; head injuries; shock due to peritonitis, myocardial infarctions, acute pancreatitis; a case report from Basle relates the successful treatment of tetanus by "artificial hibernation." The method has been used extensively in England by Smith and Fairer<sup>11,12</sup> to combat the stress of extensive operative procedures, particularly in poor risk patients.



## CASE REPORTS

Case 1: S.O., a 42 year old miner was pinned under a rock fall while at work in a New Waterford coal mine. Attended in the mine, he was given 50 mg. of demerol IV and IM. He arrived in hospital with the following: (1) a compound fracture of the right tibia and fibula just below the knee; 6 inches of the distal tibial and fibular fragment were driven upwards and laterally, external to the knee; the whole muscle mass of the leg was burst open; the right foot was internally rotated, and pointed to the left shoulder; (2) a "stretch and tear" laceration below and parallel with the right inguinal ligament, starting near the iliac spine, extending to near the anus and exposing the underlying muscle and femoral vessels; (3) pelvis—a comminuted fracture of the left ilium extending into a subluxated left sacro-iliac joint; wide separation of the symphysis pubis; the left half of the pelvis displaced laterally and superiorly, and a fracture through the descending ramus of the right pubic bone; (4) compression fracture of the fifth lumbar vertebra; (5) fracture of the eleventh rib on the right side, posteriorly; (6) multiple abrasions of the body and contusions of the scalp in the occipital area.

The patient was in severe pain and shock; the blood pressure was 50/? and the pulse rate rapid and barely palpable. A tourniquet was applied at mid-thigh on the right leg although there was only slight oozing of blood. Through cutdowns, a nor-adrenaline infusion (levophed), albumin and 6% dextran in saline were started in the three intact extremities. Morphia was given intravenously, oxygen fed by nasal catheter at 7 liters a minute, and the patient's blood grouped and cross-matched. Blood was given into both arms under forced pressure. Rupture of the urinary bladder was ruled out; an indwelling Foley catheter was left in place. Because acute gastric dilatation and paralytic ileus had ensued with extreme retching and vomiting, a Levine tube was passed into the stomach and Wangensteen suction started.

Five hours later the pulse rate was 120-130 per minute and the pressure rose to 100/85, where it remained for two hours and then suddenly dropped to 50 mm. systolic. After infusing more blood under forced pressure and increasing the levophed drip rate, the pressure rose to an unsteady 100/80. During the next 16 hours the blood pressure twice fell to levels of 50 and 60 mm. systolic and many times to around 80 mm. Because of these drops in pressure, free internal hemorrhage and/or ruptured viscus was constantly feared. However, there was no clinical evidence of this and an abdominal paracentesis failed to yield free blood.

During the first 24 hours in the hospital, the patient received: 200 ml. of serum albumin; 500 ml. of 6% dextran; 11 units of blood (5500 ml.); 3 nor-epinephrine drips, (4 ml. levophed in 1000 ml. of 5% G/W); 400 mgm. of hydrocortisone (Solu-Cortef) intravenously; oxygen at a flow of 7 liters per minute. Intravenous morphia, grs. 1/8 to 1/4 was required frequently. Urinary output during this period was 67 ml.

Despite further therapy the pulse and blood pressure had not stabilized; pulmonary edema was feared because of the volume of intravenous fluids. Meanwhile the patient's condition was worsening and he was nearing a state of exhaustion. The right leg had greatly swollen, and a slight odor of putrefaction was becoming obvious. Seemingly, a therapeutic stalemate had occurred. Upon the suggestion and agreement on the use of the "lytic cocktail," a telephone consultation with Dr. Andre Pasquet of the Anaesthesia Depart-



ment of the Victoria General Hospital, Halifax, was made. He was in agreement with the move and offered further valuable instructions.

The "cocktail" was started intravenously at 40 drops per minute. Since this mixture can produce unpredictable hypotensive periods, a levophed drip was made available.

The patient lapsed into a sleep after 40 minutes. A change in respirations occurred; hitherto they had been rapid, 24-28 per minute, shallow and irregular. With the "cocktail" they slowed to 12 per minute, became very deep and of even rhythm. Ice packs were placed over the axillae and in the inguinal areas; however, the axillary temperature fell to only 97 degrees F. from a high of 99.4.

The following observations were made: (1) alteration of the respirations, as noted above. Thoracic in origin, the inspiratory phase was long and deep during which the systemic systolic pressure could be detected 8-10 mm. higher than during expiration. This was not noted when the respirations had been rapid, shallow and irregular; (2) it was necessary at times to use a levophed drip to maintain the blood pressure above 90 mm. systolic; (3) marked improvement of the skin color with absence of sweating; (4) there was no response to pin-prick and the eyelid reflex was absent.

After four hours of this sleep, the patient was moved to the operating room for amputation. Although stage 3 anaesthesia was attained with the "cocktail," out of fear rather than necessity, 5 ml. of pentothal (25 mg./ml.) were given; after 2 ml. of anectine the patient was intubated. A 50:50 mixture of nitrous oxide and oxygen at a high rate of flow was started. After 5 minutes the amputation of the right leg above the knee was started. After ten minutes, as the saw was cutting the bone, the pressure suddenly fell to 50 systolic and the pulse shot up to 180 per minute. The nitrous oxide was stopped, a levophed drip instituted and more blood infused under forced pressure; the cocktail drip was allowed to continue. Slowly the pressure rose to 100 mm. systolic and pulse slowed to 160/minute.

The operation went on, and again out of fear, only oxygen was given to the patient for five more minutes. Observing that the patient was still in the stage of surgical anaesthesia, oxygen alone was administered for another five minutes, and so on for the next forty minutes to the end of the operation. Briefly, the postoperative period: Six hours later the "cocktail" was discontinued. Within six hours he slowly awoke and asked for a cigarette! The blood pressure and pulse had stabilized. The urine output, which for the first 24 hours prior to the operation was 67 ml., rose to 550 ml. for the first 24 hours postop, and thereafter increased to over 1200 ml. daily. On the fourth day, bowel sounds returned. A few days later, definitive treatment of the pelvic and vertebral fractures was able to be done and the patient is now doing well.

Case 2: M.O.'C., a 24 year old white female was admitted to hospital on October 30, 1957, with painless vaginal bleeding. She was 32 weeks pregnant and the membranes had ruptured prior to admission. The blood pressure was 100/62 and pulse rate 84/minute; hemoglobin was 66% (Sahli). There were no perceptible uterine contractions and the fetal heart sounds were normal. A tentative diagnosis of placenta previa was made. She was cross-matched and put to bed. The next day there was a moderate amount of vaginal bleeding and a sterile pelvic examination revealed a central placenta previa. At 5:00 a.m. on Nov. 1st, two days after admission, she awoke with a large gush



of bright blood and clots from the vagina. The blood pressure was 110/56, the pulse 100/minute. Blood, 1000 ml., was administered. At 9:20 a.m., a spinal injection with 12 mgm. of pontocaine was given and at 9:30 a.m. a cesarean section was started. By 9:50 a.m. a living male infant was delivered via a low transverse uterine incision. After the placenta was removed, the suction apparatus suddenly stopped and refused to work. In closing the uterine incision large sponges were used to remove blood from the area, which was far from satisfactory for good vision.

At 10:20 a.m. the operation was completed; the blood pressure and pulse were at normal levels and the patient was removed to her bed. It was then that brisk vaginal bleeding was noted. There was no excessive bleeding from the incision. Suddenly, she went into acute collapse; the blood pressure fell to 70/50, the pulse was weak and 148/minute, and the patient's color became blanched, with marked sweating. Cutdowns were performed on the lower extremities and blood under forced pressure given; a levophed drip and 6% dextran in saline were started in the upper extremities. She continued to bleed actively from the vagina and the blood pressure varied between 56 and systolic and the pulse waxed and waned between 130 and 150.

She was brought back to the O.R. at 12:10 p.m., and had received 1500 ml. of blood since the completion of the section, as well as levophed and dextran. A subtotal hysterectomy was performed under pentothal-cyclopropane anaesthesia. The operation was completed at 12:55 p.m.; she had received 1000 ml. of blood during the operation under forced pressure but the blood pressure remained below 90 mm. systolic.

Postoperatively, she was not removed from the operating room, the pressure wavering between 70-90 systolic; the pulse remained rapid. Then, at 2:30 p.m. (about 1 1/2 hours postop., during which time she had received another 1000 ml. of blood), unexplainably the pressure again fell, to 50 systolic and the pulse became barely palpable. More blood was given by forced pressure, a levophed drip started and oxygen given by mask at 6 liters/minute. She was placed in moderate Trendelenberg position and the lower extremities were tightly bandaged. For the next half-hour the pressure did not rise above 60 systolic, the pulse remained rapid and weak and the respirations were 32/minute and irregular. She became semicomatose and her eyes were deviated with the sclerae of the eyes visible.

At this point, at 3:00 p.m., she was given three injections of vasoxyll—1, 2, and 3 ml. (2 mgm./ml.) about a minute apart with no change in the blood pressure. The records kept showed that between 3:00 and 3:05 p.m., the blood pressure could not be determined.

At this time, the "lytic cocktail" was started intravenously at a rate of 60 drops per minute. Ten minutes after the start of this, the pressure was picked up at 54 systolic and the radial pulse rate was 168. For the next ten minutes, neither could be detected. Blood was being given under forced pressure all the while. Then, at 3:30, twenty-five minutes after the start of the "cocktail," there began a gradual improvement of the pulse quality and a slow rise of blood pressure. Around 7:10 p.m. good skin color returned and the sweating ceased. The respiratory rate and quality improved markedly.

The "cocktail" was discontinued eight hours after the start, and 5 hours after the pressure and pulse had stabilized. She awoke about 3 hours after the mixture was discontinued. Prior to receiving the "cocktail" she had been given 11 bottles of blood (5500 cc.); while the "cocktail" was administered



she received 5 bottles (2500 cc.) over the 8 hour period, even though the general condition improved and stabilized after 2 hours of the hibernating state. Again a marked change in urinary volume was noted; from the start of the section up to 4:30 p.m., a period of 7 hours, the output was recorded as 50 cc.; this amount was obtained within the next hour, and the total output for the next 24 hours was 2850 cc. The postoperative period was uneventful and she was discharged from hospital 13 days later.

Case 3: M. McN., an 83 year old white female with known hypertensive cardiovascular disease was admitted to hospital with a history of vomiting dark red fluid 24 hours prior to admission and of passing tarry stools for 2 days. No other coherent history was obtained. She appeared pale; the blood pressure was 170/100, the pulse 80/minute. The heart was moderately enlarged with a grade II apical systolic murmur. Slight pitting edema of the pretibia and ankles was noted. The blood hemoglobin was 4.8 gm. %, the nonprotein nitrogen 45 mg.% and the total protein 5.3 gm.%. The clinical diagnosis of peptic ulcer with hemorrhage was made.

During the next 20 hours she had one episode of vomiting and continued to pass tarry stools. Along with supportive care and cardiac regime she was given two units of blood (1000 ml.). The blood pressure was unsteady, ranging between 192/88 and 110/70; the pulse varied between 80-124/minute. About 24 hours after admission she suddenly vomited copious amounts of fresh and altered blood and lapsed into shock. There were no indications of possible acute myocardial occlusion and it was felt that gastrectomy was indicated, despite the obvious poor anaesthetic risk.

At 8:00 p.m. the "lytic cocktail" was started intravenously at 30-40 drops/minute; within one hour the patient lapsed into a deep sleep. The patient was then partially undressed and the room cooled by opening the windows, it being a cool winter night. Rectal temperatures were rechecked between 95-96 degrees F. Initially there were some variations in the blood pressure but by adjusting the rate of flow of the drip, the pressure was maintained between 130/90 to 152/100. Respirations were recorded between 14-16/minute and regular with long, deep inspiratory phases. At 11:00 p.m. the patient was brought to the operating room and given a small amount of pentothal. After anectine, the patient was intubated and then placed initially on a 50:50 mixture of nitrous oxide and oxygen which after 5 minutes was changed to oxygen. At 11:30 p.m. the operation was started and the subtotal gastrectomy completed in approximately one hour later. All the while the pulse, respirations and blood pressure remained stable. The "lytic cocktail" was discontinued on removal of the patient to her room and she was slowly rewarmed. She was still unconscious, although her general condition appeared good. About 7 hours after the operation, the blood pressure suddenly fell to unobtainable levels and the patient expired. Autopsy was not performed.

### COMMENT

Despite the administration of some 9500 ml. of total fluids, including blood, in case 1, and 6000 ml. in case 2 with plasma expanders and vasopressors and other measures the shock state persisted. With the "cocktail" the results were dramatic; more convincing are the clear cut increases of urinary output in both cases. This change emphasizes the rationale of therapy. In dogs there is no significant change in renal blood flow after the injection of a ganglionic



blocking agent. If nor-adrenaline is given a sharp fall in the renal blood flow, coexistent with an increase in blood pressure, occurs.

In all cases the respirations were slowed but improved in quality, remained spontaneous and needed little or no mechanical assistance. CPZ has also been shown to reduce bronchial secretions. With the mixture, after a small amount of pentothal no anaesthetic agents were actually required. However, if cooling is used, one may increase the cocktail to prevent any detectable shivering.

The use of nor-adrenaline in these cases will seem to be contradictory. We have been advised that one need not fear lowered blood pressures as long as blood replacement is being carried out but that one should attempt to maintain a systolic pressure of around 80.<sup>15</sup> It is perhaps more advisable to slow the "cocktail" drip with sharp drops in pressure rather than resort to nor-adrenaline, although it is emotionally difficult to refrain from use of the latter. Hershey and associates have proposed that after the onset of hemorrhage and shock in dogs, CPZ is not beneficial.<sup>7</sup> The results with 2 of our cases are to the contrary.

Case 3 deserves further special comment. Myocardial depression, a complication of hypothermia, is enhanced by CPZ and aggravated by hypoxia. We erred in discontinuing oxygen too quickly as we feel certain that a hypoxic-induced cardiac arrhythmia was the cause of death. In elderly people, particularly, this hazard is prevalent and oxygen should be always given and with mechanical assistance of respirations if indicated.

In body cooling, measuring the body temperature with a simple thermometer is crude. We had no real indication of the body temperature and now strongly feel that unless more sensitive instruments are available that vigorous cooling should be avoided. We do feel, however, that the "lytic cocktail" without cooling is relatively safe.

## METHODS

A number of ways of employing the "lytic cocktail" are available. We employed 50 mg. each of CPZ, phenergan and demerol in 250 ml. of saline intravenously 40 gtts./minute. With severe pain a 100 mg. of demerol may be used. Blood pressure drops may be averted by slowing the drip rate. After 40-80 minutes, a deep sleep is produced. For surgical procedures little pentothal is required for induction and a surgical plane can be attained with a dilute nitrous oxide-oxygen mixture. In elective cases, 50 mg. each of CPZ and phenergan I.M. may be given on the eve of operation and repeated with 50 mgm. of demerol 1 1/2 hours before operation.

The length of time one keeps up the "lytic cocktail" is variable. Generally, when the blood pressure and pulse have stabilized for at least 1-2 hours, the "cocktail" may be discontinued.

We have employed premedication with 50 mg. each of CPZ and phenergan on the eve of operations and combined with 50 mg. of demerol 1 1/2 hours prior to operation with routine nitrous oxide, ether or cyclopropone anaesthesia. Induction is smooth and quick, less volumes of gases are required and post-operative nausea and pain are markedly reduced.

A precipitate forms when CPZ is mixed with any of the commonly used thiobarbiturates; it is also precipitated by hexamethonium and atropine sulphate. It may be mixed with anectine, d-tubocurarine, demerol, morphine, adrenaline, nor-adrenaline and phenergan. CPZ should be diluted with saline

for intravenous use because of its low pH and danger of blood vessel damage. Deep intramuscular injection is somewhat painful and again saline should be added as a diluent.

### SUMMARY

A brief review of the literature suggests that the abolition of neural and hormonal responses to trauma and hemorrhage is associated with increased survival. This abolition may be attained with ganglionic blocking agents or with the phenothiazine derivatives (CPZ and phenergan) through their autonomic actions. Three cases are presented employing the "lytic cocktail" in conjunction with body cooling. The purpose of the report is (a) to prompt the rural practitioner, particularly those in mining areas where traumatic cases are prevalent, to consider the method and (b) to demonstrate the use of the method in a small community hospital.

### ACKNOWLEDGEMENTS

Appreciation is extended to Dr. Andre Pasquet of Halifax for his helpful advice and to Poulenc Laboratories, Montreal, for a generous clinical supply of chlorpromazine and phenergan.

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# Histological Examination of Aspirated Bone Marrow

C. D. Chipman, M.D.  
Department of Pathology  
Dalhousie University  
Halifax, N. S.

## INTRODUCTION

Bone marrow examination is an integral part of many clinical investigations and is very useful in the diagnosis and management of diseases of the hemopoietic system. The activity of the marrow may be studied in a variety of diseases and the appearance may be diagnostic in cases of obscure infection or occult malignancy. Traditionally the marrow is studied by smearing the material on slides and examining the cells as isolated components of an anatomical system. This method of examination reveals morphological details of individual cells and in this respect is superior to any other method; in many instances the subtle changes of cell structure, granulation, and depth of staining can be appreciated only in smear preparations.

However smears of the bone marrow do not show the cells in relation to their neighbours within the marrow particle or the relative proportion of cells and fatty tissue. In order to demonstrate these relationships, histological sections are required and this method gives a truer indication of the cellularity of the marrow. In such sections one may find secondary tumours and granulomas in a state which is familiar to the tissue pathologist. The two methods of examination complement each other and both are needed for accurate diagnosis. The smear gives the subtle morphological alterations of individual cells; the sections show the relationships of the cells to each other and to any infiltrative process. The following series of cases was studied by both methods in an attempt to evaluate the histological method and assess its value in the routine study of the bone marrow.

## MATERIAL AND METHODS

Thirty-nine routine bone marrow aspirations were examined by making smears and also by histological sections of the marrow particles. The majority of the patients were from medical services. This was an unselected series and most of the patients had hematological disorders. No attempt was made to seek out patients with metastatic tumours and in many cases the diagnosis had been established and marrow examination was indicated for the control of treatment.

The collection of specimens for histological study was simple and was easily made part of the routine procedure. The smears were first made in the usual way because the specimen cannot be spread well if allowed to clot. Only a small volume of aspirated material was needed for both smears and sections. When marrow is aspirated all the particles are removed from the bone in the first cubic centimeter of material; further aspiration yields only peripheral blood which dilutes the marrow. This important first cubic centimeter of material was obtained by a single sharp pull on the syringe and there was minimal dilution with blood.

The content of the syringe was ejected on a clean glass slide and the slide was gently tipped so that the fluid part of the aspirate ran off leaving marrow particles on the slide. From these particles the smear and squash preparations were made on other slides, rapidly before clotting occurred. After satisfactory smears had been made, the marrow particles remaining on the slide were gathered together with the tip of the aspirating needle; they were usually caught up in strands of fibrin clot and could easily be grouped together. These particles, with any residual material in the syringe or within the lumen of the needle, were placed at once into 10 c. c. of 10% formalin and sent to the laboratory for processing. The formalin was filtered off in the laboratory, the marrow particles collected on a filter, grouped together to form a small "button" of tissue and processed in the usual way for paraffin sections. By using cloth material as a filter and wrapping the tissue particles in the cloth during processing and paraffin embedding, no tissues were lost and the cloth was removed before the tissue was sectioned. In all cases in which the amount of tissue submitted was adequate, satisfactory slides were obtained. Occasionally the slides were unsuitable when there was a large volume of clotted blood and few marrow particles. The blocks were sectioned at five microns and stained routinely with hematoxylin and eosin. Stains for hemosiderin were done routinely on most specimens in this series. Unstained sections were cut and were available for any special stains which might be indicated such as stains for mucin and acid fast stains for tubercle bacilli.

## RESULTS

Of the thirty-nine cases examined, eleven specimens were unsatisfactory because the material submitted was insufficient for histological processing. This was attributed to unavoidable variations in the technique of collection which was carried out by several individuals; when the collection of marrow particles was done by one person the material was sufficient for histological processing in nearly all cases. In twenty-eight cases the smear diagnosis was confirmed by the histological preparations. In two cases unsuspected secondary carcinoma was discovered in the sections. In one case in which secondary carcinoma was suspected clinically none was found either on smear or in the sections. Miliary tuberculosis was found in a marrow aspiration from a patient terminally ill with acute leukemia. Acid fast bacilli were demonstrated in the granuloma with special stains, and the diagnosis was confirmed by autopsy.

## DISCUSSION

Smears of the marrow are necessary in order to study the morphology of individual cells. Variations in chromatin pattern, degree of cell maturity and subtle cytoplasmic changes are seen well in smears and cannot be detected in histological sections. The bone marrow changes of pernicious anemia which may be so characteristic in smears, are only suggested in marrow sections; the changes of iron deficiency anemia are not well seen in sections and smears must be used to diagnose both these conditions with confidence. The distribution of cells and the degree of cellularity of the marrow, which are an index of hypoplasia or hyperplasia, are easily assessed in sections. With smears there is a dilution factor which cannot be assessed.

The detection of secondary carcinoma and certain granulomas is much easier in histological sections and in this small series of predominantly hema-



tological cases, two instances of unsuspected cancer were encountered. Other studies have shown that cancer cells may often be found in the bone marrow when radiological examinations are negative. Aspiration biopsy of an iliac crest or vertebral spine may reveal secondary tumour and such a finding can influence the surgical management of the primary growth. The significance of isolated tumour cells in the marrow has yet to be determined in view of the recent work on the presence of cancer cells in the circulating blood, but the presence of metastases is certain when sections show the tumour cells in sheets or groups with the development of a fibrovascular stroma. These relationships can only be seen in sections of the marrow in which the original relationships of the cells are preserved. The accuracy of this method of detecting secondary carcinoma is limited by the small amount of tissue available for examination and by the random distribution of metastatic deposits in the bone marrow. It is doubtful whether bone marrow aspiration can be recommended as a routine screening test for metastases but aspiration biopsy is indicated when there is obvious hematological abnormality such as severe anemia.

## CONCLUSIONS

Thirty-nine routine bone marrow aspirations were studied by smears and by histological methods. Eleven cases were unsatisfactory for histological diagnosis, but with improved technique adequate amounts of material may be obtained in nearly all cases. In twenty-eight satisfactory cases there were two unsuspected secondary cancers and one miliary tuberculosis. The advantages and disadvantages of both methods have been outlined; neither method can give complete study of the marrow and the use of both is recommended.

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# Crippled Children's Clinics

A Paper given by Daniel J. Rooney, M.S.W.

at the Eighth Annual Meeting of the N. S. Branch, C.P.H.A.

I welcome this opportunity to meet with you this morning because I know from past experience that many of you have an intimate and active interest in the crippled and handicapped children's program of our Province. It is almost three years since I was appointed to my present position, and it has been most gratifying to receive such excellent support and co-operation from other Health and Welfare agencies and organizations. Without one or two agencies in particular, our program would have been delayed at least a year.

I notice from the agenda, that my task here this morning is to tell you something about one phase of our program "**Crippled Children's Clinics.**" I mentioned already, the wonderful co-operation I received from the various agencies. Even the program Committee gave me the choice spot on this morning's program, 11:00 A.M.—just after coffee and just before lunch. The program Committee has given me scope, and yet they have been considerate of the audience, by restricting me to one phase of our program.

When I was asked to speak on our type of clinic, I was a little surprised because I felt that by this time everybody should know the function of our type of clinic. Yet, in retrospect, perhaps I should realize that after two and one-half years and 41 clinics later, I too still have much to learn.

My intention here this morning, is to answer directly the four questions that are asked most frequently concerning the clinics—

1. Why use Mobile Clinics as a means of assisting Crippled and Handicapped Children?
2. How do the Clinics function?
3. When did they start?
4. Are they successful?

## 1. WHY USE MOBILE CLINICS?

There are a number of reasons that would answer this question, but I believe the basic answers lie in **Practicability, convenience and concern**—**Concern** for the crippled child and its parents. Practical because we are efficiently deploying specialized and professional services not available in many parts of Nova Scotia. Indeed, if every child who was referred in to our clinic was transported to Halifax for assessment, our Society would be faced with an overwhelming financial debt. Then there is the convenience of the child and parents to consider. Many children would never have been able to make the trip to Halifax and many parents of large families or poor financial circumstances would never have considered the suggestion. It is difficult for us who are accustomed to city life or take travelling as an every day affair to understand the problems and anxiety of parents when they are advised to take their crippled child to a strange busy city. So to provide convenience and respect the concern of the many unfortunate families, we deploy the services of specially trained medical and social personnel. I say deploy, because we arrange through the Chief of the Orthopaedic Service of the Children's Hospital and the Chief of Paediatrics for their service or one or more of their staff



to attend our clinics in various areas of the Province. How many of us realize that for our population of approximately 800,000 people, we have three orthopaedic surgeons. Vancouver with a population less than ours has 20 orthopaedic surgeons. Another fact that deserves mention is that all the certified practising paediatricians are situated in one area of the Province. I feel that the reasons I have already stated are sufficient to answer the original question asked—"Why Use Mobile Clinics?"

## 2. HOW DO THE CLINICS FUNCTION?

The Mobile Clinic functions on the concept that team work is the correct approach to the problems of the crippled child. It is a co-operative effort on the part of a local service club, the family physician, the Nova Scotia Society for the Care of Crippled Children, the Department of Health, the Victorian Order of Nurses and the Children's Hospital. **The Clinic Team** is usually composed of an orthopaedic surgeon, one or more paediatricians, a social worker, one or more nurses and sometimes a speech therapist. This type of clinic is made available by the Society on invitation to any area of Nova Scotia. Before the invitation is accepted, however, the Society asks that the Service Club or organization conduct a survey of their area in co-operation with the local doctors and health nurses.

Once the clinic list is made available to the Society, dates are set for the clinic. The local club is responsible for conducting the survey, sending out appointment notices, providing suitable space for the clinic and providing secretarial help at the clinic. Each case is given a definite appointment time and very little delay is encountered by the patient or parents. Only cases referred in by the family doctors in the area are accepted for assessment and a written consultation is sent to the family physician on each child referred in to the clinic. On occasion, one or more of the team have visited the home of a crippled child during the clinic because the child could not be transported to the clinic. Other times they have been requested by a family doctor to visit the local hospital wards to assist on a specific problem or to express their opinion on treatment.

The clinics are a free service to the public and provides the family physician with specialists service. They are a continuous service and visit each area in the Spring and Fall.

## 3. WHEN DID THE CLINICS START?

Mobile Orthopaedic Clinics have been in operation in this Province for at least twenty-five years. However, Mobile Crippled and Handicapped Children's Clinics using the teamwork approach to this problem started about two years ago, to be specific, October 10, 1956 in the town of Lunenburg. This was our first Mobile Clinic and it was a half day project. In the afternoon we moved to Bridgewater Hospital where forty-seven children were examined.

Four months discussion, interpretation and education preceded the first clinic. It was a new service not used previously East of Ontario, Consequently, many of our people were, to say the least, "From Missouri" and needed to be shown." However, I was convinced that this type of clinic was the answer to one of the needs of the Crippled Children in Nova Scotia. I had seen this type of clinic in action in the Eastern United States and in Ontario and with a few alterations, it was my opinion that this type of clinic could be most useful in Nova Scotia. The plan was put before our Medical



Advisory Committee, ethical and financial ramifications were discussed. Because we were broadening the scope of the original idea of the orthopaedic clinics many new problems had to be considered. Finally the plan was endorsed by our Medical Advisory Committee and recommended to our Board of Directors for implementation. Then we commenced to introduce the new plan to the various groups that would be interested and with whom we would be working. We were given great impetus when we applied for and received the approval of the Nova Scotia Medical Society. Our service club members in most areas were enthused and soon we were organizing our first clinic.

#### 4. HOW SUCCESSFUL ARE THE MOBILE CLINICS?

Up to now, we have dispatched 41 clinics. Ten areas of the Province are now covered. Clinics have been organized from Shelburne to the Northern tip of Cape Breton. Slightly over 1,000 Crippled and Handicapped Children have been assessed. The diagnosis and suggested treatment varied so greatly that it was impossible to estimate them in figures. The team has seen every form of crippling. They have seen a child manifesting early symptoms of a brain tumor and substantiated the diagnosis of the family physician. They have suggested treatment for the child manifesting signs of osteomyelitis. They have followed up recommended surgical procedures and have psychologically supported and assisted mothers in understanding their crippled children. Approximately one hundred and fifty children have come to the Children's Hospital for surgical procedures. Others have come in for further investigation and study. We are just beginning to see the results of the first clinics. In our clinic we see the child who has returned from hospital who has had strabismus but now portrays normal vision after a surgical procedure. In another clinic the orthopaedic surgeon cuts the cast off a boy's leg who has had a club foot with the heel lifted from the ground, but now is fitted with a regular shoe and walks quite normally. At a clinic in North Western Nova Scotia we hear the speech therapist assessing a child with a newly repaired cleft lip or cleft palate and going over exercises with some concerned mother. Yes, the clinics are successful when we realize that crippled and handicapped children are being helped to live more active and successful lives. Not forgetting, of course, the boost given to the parents morale.

The clinics have been a means of drawing out many unknown or forgotten children. We feel there are many more that could still benefit from the clinic service. Our only means of referral is through the family physician, we need his support and his help if we expect to continue and improve our present service.

I trust I am following the charted course that I outlined for you earlier. It has been most difficult I can assure you to stick to my script. However, I did allow myself some margin so that I can make a few observations and project into the future.

It is interesting to note that the general public and many physicians still relate the term cripple, to the child with the brace or crutch. Perhaps we should change the term cripple to handicap.

It is interesting, also, to note that in many of our clinics, we have a decided number of referrals to either the orthopaedic service or to the paediatric service. I presume this can be related to the interest of the doctor or doctors in the area.



It is interesting to note the large number of hare lip, cleft palate and pronounced speech defects we have been encountering. Our Speech Therapist, Miss Davies, felt that the incidence of this problem appeared higher here than in other areas, she has worked. Within another year, we intend comparing the known case load in our Central Register with other Provinces that have Registers for Crippled and Handicapped Children. It is our responsibility to determine if we have a higher incidence and if so, attempt to take corrective measures.

Presently, the clinic team consists of two medical specialists, in the future, we may have to consider other specially trained personnel, such as a psychologist, or E.E.N. T. specialist, and a psychiatrist. If the need is apparent we will consider the additions.

We are a comparatively young Society, far from maturity, and as a consequence, we have no blanket policy. We consider each case on its merit. I can assure you however, that we have the interest of the crippled and handicapped children of this Province uppermost in our mind. We are anxious to learn and co-operate with any movement that will open up new avenues of health and success to the crippled child of Nova Scotia.

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### Skin Manifestations of Drug Allergy\*

Therapy of allergic reactions depends on the type of response that is experienced. The drug should be stopped and antiallergic measures instituted.

The most serious complication is the anaphylactoid reaction. An adequate airway must be maintained and measures to combat shock instituted. If the drug is injected into the arm a tourniquet is applied above the site of injection and 0.3 cc. of epinephrine, 1:1000, is given. Cortisone, 100 mg. given intravenously, may be lifesaving, and a bronchospasm may be combated by administering aminophylline intravenously. Antihistamines are helpful and may be given either intramuscularly or intravenously. As a means of promoting elimination of the drug, 5 per cent dextrose in water is administered intravenously.

The management of the cutaneous symptoms depends on their type. In urticaria and angioneurotic oedema, antihistamines are indicated. Pruritic, vesicular, pustular, exfoliative and papular eruptions require topical therapy which includes baths, wet dressings, lotions, pastes and ointments. It may also be necessary to combine oral and parenteral with topical treatment.

If, because of an urgent situation, it is vital to continue the administration of a drug to which a patient has become sensitized, it is possible to prepare the patient with ACTH or cortisone and continue this medication during and even beyond the time the essential drug is given. This plan of treatment is dependent on the extreme need for the specific drug and the type of reaction that has occurred previously.

A review of 83 cases of drug allergy at the Lahey Clinic revealed that barbiturates were the aetiologic agent in 40 per cent and penicillin accounted for 24 per cent of the group.

James, H. D., and Stanton, J. P., *Post-graduate Medicine*, 21: May, 1957.  
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## Book Review

DERMATOLOGY: By Pillsbury, Shelley and Kligman.  
(Published by W. B. Saunders Company 1956).

It is customary to review a text-book at its time of first publication, but it would seem that an estimate of the worth of a text-book is likely to be more authoritative after the reviewer has become familiar with the volume by means of using it repeatedly over a period of several months. This, the most recent major text-book on Dermatology, was produced by the Philadelphia group rather more than two years ago, and can be recommended more highly than any other standard text-book on the subject produced for the general physician.

In assessing the worth of any book it is necessary to consider to what extent the authors have succeeded in attaining their objectives, and whether, in so doing, they have produced a work which will be of undoubted assistance to the average reader. It is considered that from both these points of view this book must be regarded as a success.

In their preface, Pillsbury and his colleagues point out that diseases affecting the skin present much difficulty and confusion to the general physician, who will find that from seven to twenty-five per cent of his patients present themselves to him with a chief complaint of a disease affecting the skin. The authors suggest that the main reason for the difficulty encountered by the general physician, in dealing with his dermatologic patients, is that his pre-clinical training has not included an adequate acquaintance with the fundamental aspects of skin physiology. Often "the medical student has difficulty in learning something about diseases of the skin, because he has had little opportunity to understand its normal functions. This is in contrast to his ability to understand the diseases of the kidney, for instance, because his previous study of the anatomy and functions of this organ has been much more prolonged and detailed." For this reason, the chief facts regarding the normal skin have been summarized in several chapters of the book, and study of the illustrated diagrams and condensed summaries at the end of each chapter will do much to promote a better understanding of the various dermatoses.

There is an extensive discussion of the various methods of dermatological diagnoses, considered on the basis of the types of primary and secondary lesions, distribution patterns, the relative instance of various dermatoses in infancy, childhood, and old age, the chief diagnostic possibilities in dermatoses limited to certain parts of the body surface and mucous membranes, etc. This section of the book has been very well done, is expressed in simple terms, and is profusely and clearly illustrated. The pathologic changes are not considered in detail, "but indication is given of those diseases in which a biopsy may be helpful or even essential."

The authors point out that dermatologic terminology has been the butt of many humorous allusions, although verbosity employed chiefly to obscure ignorance and to impress the uninitiated is certainly not confined to the Dermatologist. A single term is used in designating a clear-cut skin disease in this book, and at least a third of the terms ordinarily found in dermatologic texts have been excluded as obsolete. One of the most pleasant features of this volume is its readability—its choice of phrase and lightness of touch being comparable to much of the content of Boyd's text-book of General Pathology.



The description of methods of treatment is clear and practical, and the undergraduate student in particular will appreciate the detailed explanations of such matters as the correct use of wet dressings, the importance of the choice of the correct vehicle, the technique of electrocoagulation, and the dangers of over-treatment.

Frequent references are made in the text to the cutaneous lesions which are reflections of systemic disease, and in the chapter entitled "Psychocutaneous Medicine" a sane middle course is steered between those physicians who insist upon a purely organic cause for every dermatosis, and those who "see the psyche lurking behind every pimple." These chapters, and the one on the desirability of taking a proper medical history from dermatologic patients, emphasize the importance of dealing with the whole patient, and of the impossibility of a dermatologist, or any other physician, confining his attention to a single organ.

It would seem to be the habit of some reviewers to criticize books with the sole object of demonstrating their own superior knowledge of the subject under discussion. The following remarks must certainly not be interpreted as justification for any such intentions by the present reviewer, whose respect for the authors of this book has continually increased as a result of a study of their work. However, it is not to be expected that everyone will agree with all the content of such a large volume, and in fairness it must be noted that the writers themselves make no pretence of infallibility.

A minor criticism is of the almost complete condemnation of cryotherapy (as by carbon dioxide "snow") in the treatment of capillary haemangiomas, and of some mixed haemangiomas. In our hands this produces excellent cosmetic results, provided the appropriate light pressure is exerted for the appropriate time. (There is no disagreement with the general principle that the great majority of immature haemangiomas require no treatment, and should be kept under infrequent observation for the months or years before spontaneous involution occurs.)

Perhaps some greater emphasis should have been laid on the replacement of superficial radiotherapy by topical hydrocortisone in the management of pruritic chronic dermatoses. (In the experience of the reviewer, for every ten of such patients who would have been treated by irradiation a few years ago, only one requires such treatment today). Some report on the methods available to reduce the cost of topical corticosteroid therapy to the patient would also have been welcomed.

The size of the text-book (1282 pages plus index), and its cost (Twenty dollars) may at first dismay the undergraduate student or the general physician, but it is emphasized that there is remarkably little in this book which is not of general interest, or which is unessential to the practising physician who requires day-to-day guidance and a source of reference.

This book has no color photographs, which may at first sight seem fatal for a text-book of dermatology. However, the variations of accuracy of color reproduction in the printed book are such that almost all available color photographs in standard text-books are of limited value, and usually only helpful to those who are already familiar with the appearance of the lesions in life. (The only really outstanding modern atlas of Dermatology is thought to be that published by the Year Book Publishers, the cost of which is prohibitive for the average physician. This is available on demand in the Medical Library.) The hundreds of black and white photographs in this text-book are all of patients familiar to the authors, and are of such technical excellence that they form one of the strongest features of the work.

**INFECTIOUS DISEASES—NOVA SCOTIA**  
Reported Summary for the Month of December, 1958

Diseases	NOVA SCOTIA				CANADA	
	1958		1957		1958	1957
	Cases	Deaths	Cases	Deaths	Cases	Cases
Brucellosis	0	0	0	0	0	0
Diarrhoea of Newborn	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	5
Encephalomyelitis— Infectious	1	1	1	1	3	2
Food Poisoning	0	0	0	0	0	0
Gastroenteritis (1) Infectious	167	3	3	0	0	0
Hepatitis—Infectious Including Serum Hepatitis	37	0	4	0	0	0
Impetigo of Newborn	0	0	0	0	0	0
Influenza (if unusual number of cases)	96	0	663	8	381	2114
Meningococcal Meningitis and Meningococemia	0	0	0	2	10	21
Pertussis	0	0	51	0	286	375
Poliomyelitis (paralytic (non-paralytic)	0 0	0 0	0 0	0 0	3 1	4 1
Scarlet Fever and Streptococcal Sore Throat	129	0	370	0	1035	671
Tuberculosis (pulmonary non-pulmonary)	15 3	0 0	11 3	5 0	119 19	423 21
Typhoid and Paratyphoid Fever	0	0	0	0	3	18
Venereal Disease (syphilis) (gonorrhoea)	3 24	1 0	1 26	0 0	95 619	119 939
Anthrax	0	0	0	0	0	0
Cholera	0	0	0	0	0	0
Psittacosis	0	0	0	0	0	0
Rabies	0	0	0	0	0	0
Smallpox	0	0	0	0	0	0
Tetanus	0	0	0	0	0	0
Trichinosis	0	0	0	0	0	0
Tularemia	0	0	0	0	0	0
Other rare diseases	2	0	0	0	0	0
Other (if unusual number of cases)	0	0	0	0	0	0

(1) amoebic and bacillary dysentery and salmonellosis

REMARKS: The two cases listed under, "Other Rare Diseases" comprise one case of Haemophilus Meningitis in a child age 2½ years, and one case of Pneumonococcal Meningitis in a child age one year.



# Annual Meeting - 1959

## The Medical Society of Nova Scotia

Keltic Lodge, situated on Middle Head, Ingonish, is the site for the annual meeting 1959. The dates Wednesday, Thursday and Friday, June 24th, 25th and 26th. The Cape Breton Medical Society is the host for 1959. Doctor H. J. Devereux, President of the Nova Scotia Division, has working with him—

Doctor H. J. Martin, Chairman of Planning Committee.

Doctor H. R. Corbett, Chairman of Housing Committee.

Doctor N. K. MacLennan, Chairman of Entertainment Committee.

Doctor C. A. D'Intino, Chairman for Exhibitors.

Doctor J. B. Tompkins, President, Cape Breton Medical Society (Ex officio member)

Following discussion of plans at the Executive Committee January 26, 1959, a further meeting of Chairmen was held in Sydney on February 14th.

The setting of Keltic Lodge, situated on the Cabot Trail, with natural attractions of beaches, deep sea fishing, stream fishing, an excellent golf course, walks and drives make a most alluring site for the annual meeting. The Committee plans to make full use of these as the provisional programme indicates.

The annual meeting starts on Wednesday, June 24th, at 9.30. Members and their wives will begin to arrive on Tuesday, June 23rd. Social activities will start with a Cape Breton Ceidliah (pronounced Káley) at 9.00 p.m. of that day. This "short visit," or in modern terms "get together," will serve to renew acquaintances under circumstances conducive to good fellowship, Wednesday afternoon, June 24th, will be completely free of business and scientific sessions. Arrangements will be completed for fishing, boating, drives, games or what have you. The Golf tournament will be arranged under matchless conditions, as many already know. A beach party is planned for Wednesday evening. Thursday will have the President's reception at 6.00 p.m., followed by the Annual Banquet and dance.

There will be a scientific session each day in the form of a clinical paper or panel discussion. The business sessions, one Wednesday, two on Thursday, and one on Friday, will provide sufficient time for presentation and debate of the business of The Society.

The Executive Committee will hold a regular meeting on Monday, June 22nd. The Annual Meeting of the Executive will be on Tuesday, June 23rd. The meeting of the new Executive will take place on Friday, June 26th, in the afternoon.

The programme for the ladies is being prepared by a committee under the Chairmanship of Mrs. H. J. Devereux.

Members are urged to complete and forward the Housing Application form at an early date. (next page).

completed by the end of January, 1959. He said the directors were very much aware of the feeling of the profession that the subscribers should pay their own way and not be subsidized by the profession.

The clinical programme consisted of a literary case presentation by Doctor Arthur L. Murphy on "The Case Record of Johann Gregor Mendel." This proved to be a most interesting and thought provoking account of the life of this famous Augustinian monk, relating his medical and psychiatric history to his life's work.

The present active membership of the Halifax Medical Society stands at an all time high of 214, including fourteen new members elected since October, 1958. There are in addition eight honorary members.

If there are any physicians in the Halifax, Dartmouth or surrounding county area who have not yet availed themselves of membership they are invited to apply to the Secretary.

H. C. STILL, M.B.,  
Secretary, Halifax Medical Society.

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## Obituary

Doctor Andrew Fraser Weir age 66 died on January 9th at his home in Hebron, N. S. He was born at New Glasgow and was a graduate of Dalhousie University Medical School. His years of practice were conducted at Freeport, N. S. He was an elder of Faith United Church, a veteran of World War I, and a member of Scotia Lodge A.F. and A.M. He was buried with Masonic honours.

Doctor Weir is survived by his wife Bessie, three sons, Doctor Edward of New Westminster, B. C., Doctor Donald of Dartmouth, and Andrew in Hebron, two daughters, Mrs. D. MacDonald of Ferris, Ontario and Mrs. W. H. Franklin of Norton, Mass.

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Doctor Arthur Morrison Hebb age 86 died on January 13th at his home at Marriott's Cove near Chester, N. S. after a long illness.

Born in Bridgewater he attended Dalhousie University where he obtained his B.A. and M.D. Degrees. For seventeen years he practised at Chester. In 1919 Doctor Hebb opened an office in Dartmouth. His first wife, Doctor Clara Olding predeceased him.

In 1937 Doctor Hebb retired to live at Marriott's Cove. He is survived by his second wife, the former Grace Cruise, a son Doctor Donald Hebb, Toronto, and a daughter Miss Catherine Hebb, Cambridge, England. Another son Doctor Peter Hebb predeceased him in 1955.



**COLLEGE OF GENERAL PRACTICE (Medicine) OF CANADA****THIRD ANNUAL SCIENTIFIC ASSEMBLY****APRIL 20-23, 1959**

The annual scientific sessions of the College of General Practice (Medicine) of Canada have been extended to a four-day program for the 1959 meeting, which will be held at the Royal York Hotel, Toronto, from April 20th to 23rd, 1959.

The fourth annual scientific assembly is to have more than 130 exhibits, including 50 scientific displays. More than thirty of the continent's authorities on medical subjects pertinent to general practice, will address the sessions. Medical films will be shown on a continuous basis with a repeating program. General practitioners will again have the opportunity to have a medical check-up during the four-day meeting.

All scientific addresses as well as the proceedings of the business sessions and annual dinner may be heard in either French or English through the facilities of simultaneous translations.

The program will include Dr. H. Medovy, Professor of Pediatrics, University of Manitoba: acute infections of central nervous system in children; Dr. J. F. McCreary, Professor of Pediatrics, University of British Columbia: convulsions; Dr. J. A. Gilbert, Assistant Professor of Medicine, University of Alberta: clinical aspects and significance of laboratory tests in jaundice; Dr. D. L. C. Bingham, Professor of Surgery, Queens: burns; Dr. D. R. S. Howell, Associate Professor of Medicine, Dalhousie: eezema of the hands; Dr. R. Therrien, Associate Professor of Dermatology, Laval: allergies; Dr. N. E. Berry, Professor of Urology, Queens: haematuria.

Other authorities will include: Dr. M. I. Rubin, pediatrician-in-chief Buffalo, N. Y.: renal failure in children; Dr. C. H. Millikan, of the Mayo Clinic: cerebral vascular accidents; Dr. R. Gagne, Ottawa gastroenterologist: recent discoveries re stomach ulcers; Dr. C. H. Jaimet, chief of medicine, St. Joseph's Hospital, Hamilton: the place of isotopes in modern medicine; Dr. Yves Gourdeau, head of Department of Urology, Quebec City's Hospital Infant Jesus: diseases of the kidney; Dr. C. Dyson, London ophthalmologist: red eye.

Several members of University of Toronto medical school faculty will participate, including Dr. Gordon Murray, Associate Professor of Surgery, Dr. Ray F. Farquharson, Professor of Medicine: anaemias; Dr. Trevor Owen, Associate Professor of Medicine: patient symptoms; Dr. C. H. M. Williams, Professor of Peridontology: dental problems relating to medicine; Dr. W. G. Bigelow, Associate Professor of Surgery: surgery in thrombo-embolic problems; Dr. Wallace J. Graham, Assistant Professor: back pain; Dr. A. J. Rhodes, director of the School of Hygiene: newer virus diseases in general practice; Dr. A. L. Chute, Professor of Pediatrics, and chief of pediatrics at Hospital for Sick Children: abdominal pain.

Montreal physicians addressing the convention will include: Dr. M. M. Hoffman, chief physician Jewish General Hospital who gives the "Medicine for Today" lectureship at two sessions: Dr. Paul David, director of the Institute of Cardiology: diagnosis of coronary insufficiency; Dr. G. B. Maugham,

chief obstetrics and gynecology, Royal Victoria Hospital: bleeding in pregnancy; Dr. E. Savoie, Montreal surgeon: modern ideas in treatment of shock; Dr. Paul Robert: headache.

Drs. Paul David, C. H. Millikan, and W. G. Bigelow will participate in a symposium on thrombo-embolic problems; Drs. M. I. Rubin, J. F. McCreary, H. Medovy, and A. L. Chute on pediatrics; Dr. J. A. Gilbert and Dr. M. M. Hoffman will discuss jaundice.

J. D. Bell, Q.C., a Toronto legal authority, will address the doctors on "The Doctor in Court."

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### AMERICAN COLLEGE OF SURGEONS

Four day meeting for surgeons and nurses in Montreal, April 6-9, 1959.

The American College of Surgeons will hold its first Canadian four-day Sectional Meeting in Montreal, for surgeons and nurses, April 6-9. Headquarters will be the Queen Elizabeth Hotel, with many sessions scheduled at leading Montreal Hospitals.

This four-day meeting, like the annual Clinical Congress, is designed to inform the medical profession at large about developments in surgery, and to focus attention on newer ways of handling problems encountered in daily practice. The programme will include hospital clinics, panel discussions, symposia, scientific papers, technical exhibits, medical motion pictures and cine clinics in general surgery and the surgical specialties of anaesthesiology, ophthalmic surgery, otolaryngology, urology, orthopaedic surgery, and gynaecology-obstetrics.

Advance registration for this meeting will be Sunday afternoon April 5, at 3 p.m. at Queen Elizabeth Hotel for doctors, at Sheraton-Mount Royal for nurses.

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### DOCTOR WANTED

Wanted, A Doctor for rural practice. Ten bed Cottage Hospital. Paved roads. Electricity. \$100 a month subsidy from Government. Good schools. Anyone interested please contact.

Mrs. Alene Mills,  
Advocate Harbour, N. S.



**NUTRITION CONFERENCE****March 12, 13, 14, 1959.**Room 21, Arts and Administration Building,  
Dalhousie University, Halifax

The Nova Scotia Dietetic Association in co-operation with Nutrition Division, Department of Public Health is sponsoring a Nutrition Conference to be held on March 12, 13, and 14, in Room 21, Arts and Administration Building, Dalhousie University.

The conference is planned to be of particular interest to the dietetic and medical professions, and certain sessions will be of interest to nurses, social workers, teachers and the general public. There will be no registration fee.

E. W. McHenry, M.A., Ph.D., F.R.S.(C), Professor of Public Health Nutrition, School of Hygiene, University of Toronto, is to be the conference leader.

Dr. McHenry is widely known for his research activities, is a member of the Canadian Council on Nutrition, and the first President of the newly-organized Nutrition Society of Canada. His recent college-level text, *Basic Nutrition* is a major contribution to nutrition education in Canada and the United States.

The following tentative programme has been arranged:

**Thursday Evening — March 12:**

The Canadian Dietary Standard — Dr. W. W. Hawkins, National Research Council.

The State of Nutrition in Canada Today — Dr. E. W. McHenry.

**Friday Afternoon, March 13:**

Advances Pediatric — W. A. Cochran, M.D., F.R.C.S.

Obstetrics at the V. G. Obesity Clinic — W. I. Morse, M.D., Alta Kennedy, B.Sc., P.Dt.

**Friday Evening, March 13:**

Public Address — Food Facts, Fads, and Fallacies — E. W. McHenry.

**Saturday Morning, March 14:**

Current Concepts and Protein Requirements — E. W. McHenry.

Modern Concept of Lipid Metabolism, Panel Discussion — Dr. C. M. Harlow, Dr. L. B. Macpherson, Miss Elizabeth MacMillan, B.Sc.

A National Health Grant has been secured to help finance the conference.

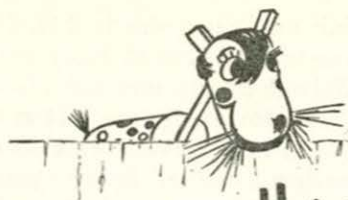
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**POST-GRADUATE DIVISION "WEEK IN SURGERY"****APRIL 13th - 17th, 1959**

This year, a different approach to this Course will be given a trial. Essentially, the mornings will be devoted to active and practical work and the afternoons will be given over to lectures, panel discussions, etc.

Our plan is to assign one or two practitioners to each Service in rotation for ward rounds, case discussions, assisting in the Operating Rooms, etc.

As usual, a full program will be mailed to you one month prior to the Course.



## Hay For Hobby Horses

**H**UMOUR is our hobby horse this month. Fashions change in comedy as in all other things. Watching T.V. makes one wonder whether there is any real humour left nowadays. Some years ago I remember reading the oldest joke in recorded history. The basic situation in it is still being used in current story-telling. There is certainly a good deal of cruelty if not outright vindictiveness in much humour. But allowing for wide variation in taste, we can agree that one man's Medea is another man's Persian. Certainly one's age, personal tastes, past education and marital status may all have some bearing upon what he considers to be funny. John's joke may be Jane's anguish. This is especially true if John and Jane are man and wife. I have always been interested in the foundations of humour. At one time, long ago, I enjoyed a modest reputation as a story teller. It is fine for a single man to aspire to an unpaid career as public entertainer. He can bubble over with little gems like "My wife is a thing of beauty and a kill-joy forever" or recount the advice to an unwed mother "Grin and bear it" and tell stories about "Holy Deadlock." Unless he has a taste for strife he will forego these doubtful pleasures after he himself marries.

These jottings are not intended to be a study of the history of humour. However, we can look at some of the inheritance of our race that has stood the test of time. Spoonerisms are a subtype of humour that have always had wide appeal although the Reverend Spooner did not find it amusing when, instead of speaking of his "half-formed wish" he heard himself say "I must have been nursing a half-warmed fish." Berating his congregation for its small attendance he intended to emphasize the "weary benches" instead he shouted "I am tired of addressing these beery wenches." It is said that Rev. Spooner went on to speak of someone "Occupeating his pie" and said he had just driven from town on "A well-boiled iciele."

A variant of this is seen in a story that appeared in Time magazine some years ago: "Four dons were walking down an Oxford street one evening. All were philologists and members of the English department. They were discussing group nouns: a covey of quail, a pride of lions, an exaltation of larks. As they talked, they passed four ladies of the evening. The dons did not exactly ignore the hussies—in a literary way, that is. One of them asked: 'How would you describe a group like that?' Suggested the first: 'A jam of tarts?' The second: 'A flourish of strumpets?' The Third: 'An essay of Trollope's?' Then the dean of the dons, the eldest and most scholarly of them all closed the discussion: 'I wish that you gentlemen would consider 'An anthology of pros.' " This type of humour smacks of snobbishness because he who tells it and he who enjoys it assume that thousands would not.

Schoolboy howlers and typographical errors are funny even if the humour aroused by them is very short lasting. A New Zealand paper stated that Mr. Jones was "a defective in the police force." Later the paper ran a retraction



saying "We regret the typographical mistake which made us refer to Mr. Jones as a defective in the police force, obviously the sentence should have read—Mr. Jones is a detective in the police farce." Mixed metaphors are also the subject of much amusement to all except the author, for example—"It is only a snake in the grass who will attempt to knife a man in the back with so evil-smelling a report" or "Most people know the position assumed by the present recumbent but where will he stand when he takes his seat?" A fish story from an American newspaper some years ago ended with this startling statement: "That's a lot of fish in any language—39 pounds—and all in one piece." Still as Fred Simmons said "For sheer tricks, fight and stamina give me a small-mouthed lass at sundown, anytime." My personal favourite concerns an Irishman who was defining the term 'Non-transferable' on a theater pass. Pat said: "Non-transferable means that if you don't go yourself you can't get in."

I would like to draw your attention to an essay written by the late George Orwell, "The Art of Donald McGill." It appears in a collection of essays published in The Doubleday Anchor Books some years ago. "Who does not know the 'comics' of the cheap stationers' windows, the penny or two penny colored post cards with their endless succession of fat women in tight bathing-suits and their crude drawings and unbearable colors?—Get hold of a dozen of these, preferably McGills—if you pick out from the pile the ones that seem to you funniest you will probably find that most of them are McGills—and spread them out on the table. What do you see? Their basic subject matter, the kind of joke they are aiming at never varies. A few are genuinely witty—examples:

"I like seeing experienced girls home."

"But I am not experienced."

"But you're not home yet."

"I have been struggling for years to get a fur coat. How did you get yours?"

"I stopped struggling."

"Judge: You're lying, man! Did you or did you not sleep with this woman?"

"Co-respondent: Not a wink, my Lord."

What these postcards are doing is to give expression to the Sancho Panza view of life, the attitude of life that Miss Rebecca West once summed up as "Extracting as much fun as possible from smacking behinds in basement kitchens." The Don Quixote-Sancho Panza combination which is simply the ancient dualism of body and soul, in fiction form, recurs frequently in the literature of the past 400 years. If you look into your own mind which are you, Don Quixote or Sancho Panza? Almost certainly you are both.—Codes of law and morals, or religious systems, never have much room in them for humorous view of life. Whatever is funny is subversive, every joke is ultimately a custard pie and the reason why so large proportion of jokes center around obscenity is simply that all society, as a price of survival, has to insist on a fairly high standard of sexual morality. The dirty joke is not, of course, a serious attack upon morality but it is sort of a mental rebellion, a momentary wish that things were otherwise.—The comic postcards are one expression of Sancho Panza's point of view—a humble one less important than the music halls but still worthy of attention. In a society which is still basically Christian they naturally concentrate on sex jokes. In a totalitarian society, if

they had any freedom of expression at all, they would probably concentrate on laziness or cowardice, at any rate on the unheroic in one form or another. In the past the mood of the comic postcard could enter into the central stream of literature and jokes barely different from McGill's could casually be uttered between the murders in Shakespeare's tragedies."

In the same volume there is an essay called "Raffles and Miss Blandish" setting out the marked change in the crime novel in the past fifty years. Most essays of Orwell's are as full of penetrating observations as a christmas cake is full of fruit.

BROTHER TIMOTHY

February 1959.

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### Obesity and Hypertension Among Young Adults\*

Using 140 mm Hg systolic blood pressure limit as a criterion for hypertension, and the Broca formula as the criterion for obesity in a young adult population (3,508 college students), it was found that the difference in the incidence of obesity between the normotensive and hypertensive students was statistically highly significant (26.5 per cent of the normotensives and 47 per cent of the hypertensives were obese).

The incidence of hypertension was 8.1 per cent among the American and 4.9 per cent among the foreign-born *males*. It was found that 979, or 27.9 per cent of the students (29 per cent of the males and 23.9 per cent of the females), were over-weight. The incidence of hypertension was 4.9 per cent and 11.3 per cent, respectively among the non-obese and the obese students. The difference is highly significant, there being more than twice as many hypertensives among the obese as among the non-obese. Of the obese, 12.4 per cent and the non-obese, 6.3 per cent of the American males were hypertensive.

No significant difference was found in the different age groups in respect to hypertension and obesity. No increase in the incidence of hypertensive obesity was found with increasing age below the age of forty. The incidence of obesity gradually increased among foreign-body students with increasing number of years of American residency.

Szent-Gyorgyi, N., American Journal of Clinical Nutrition. 5: May-June, 1957.

\*Medical Abstracts, August, 1957.



## Personal Interest Notes

Doctor and Mrs. Lea Steeves, Bloomingdale Terrace, Halifax, left by air on January 12th for Vancouver where Doctor Steeves attended a meeting of the Canadian Medical Council.

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Doctor R. C. Dixon, Professor of Medicine, Dalhousie University, left on January 19th for Vancouver, by plane, to attend a meeting of the Royal College of Physicians and Surgeons. He was away for two weeks.

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Doctor Ray MacLean has sold his house on Tower Road and South Street, Halifax, to a group of Doctors who will use it as offices. These offices are ideally situated and in close proximity to the various hospitals. Doctor MacLean has moved to his new home on Young Avenue.

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Congratulations are being extended to Doctor S. W. Williamson of Yarmouth, N. S. on the occasion of his ninetieth birthday. Friends of Doctor and Mrs. Williamson gathered at their residence on January 13th to celebrate the occasion. Birthday gifts were given in a room made most attractive by beautiful floral arrangements.

Their granddaughter Brenda (Mrs. John LeCain), Mr. LeCain and grandsons David and Billie were present.

The Yarmouth Rotary Club also honoured Doctor Williamson on their weekly luncheon and wished him many more happy birthdays and continued good health.

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Doctor S. D. Dunn of Pictou, a graduate of Dalhousie Medical College in 1943, has retired from general practice and is entering the field of public health. Doctor Dunn at the present time is at the Nova Scotia Sanatorium, Kentville, in the Department of Public Health. He will remain there until September of this year, at which time he will move to Toronto where he will study for a D.P.H. for the next year. Following the completion of his studies he will return to Pictou to assume the position of Health Officer of Pictou County.

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Doctor Ian MacKenzie of the Department of Surgery, Victoria General Hospital, has returned to Halifax from Vancouver where he attended the recent meeting of the College of Physicians and Surgeons.

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The Bulletin extends sympathy to Doctor Bernard F. Graham of Montreal, formerly of Halifax, on the sad passing of his wife, Naomi, at the age of thirty-nine.