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Original Communications.

REMARKS ON CHEMICAL CHANGES IN THE ANIMAL BODY.*

BY GRAHAM CHAMBERS, B.A., M.B., TORONTO,
Physician and Dermatologist, St. Michael's Hospital, etc.

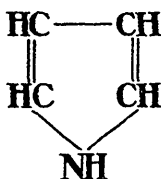
At the present time a great deal of attention is given to the study of chemical changes of normal metabolism and of morbid disturbances of disease. This is due, no doubt, to the great advances made in recent times in physiological as well as in physical and organic chemistry. Scientists are becoming to look upon phenomena of life as manifestations of chemical change. Thus it is probable that chemical change is at the bottom of every conception formed by the cerebrum; of every impulse sent out from it; of reflex actions; of muscular contraction; of secretion of glands, and of every pathological change in the tissues of the body. This makes a great field of study that is only beginning to be explored with that vigorous activity which merits success. It would appear as if the minds of chemists, physicists, physiologists and pathologists are now only becoming sufficiently ripe for the successful study.

It may be of interest to recall to mind some of the recent advances in organic, physical and physiological chemistry which have tended to bring about the present favorable condition for the study of the chemistry of living matter.

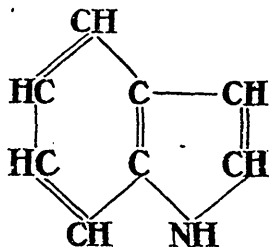
Less than a century ago chemists were very much in the dark with regard to the organic compounds which occur and

* Read at meeting of Toronto Pathological Society, February, 1907.

are formed in animal and vegetable life. They were somewhat familiar with many of the organic constituents of plants and animals, but believed that living matter was necessary for their production. The artificial preparation of urea in 1828 by Wöhler, and some time later, that of other substances found in living matter, led chemists to doubt this view; but with their limited knowledge of organic chemistry—the modern science of organic chemistry was then in its infancy—they were not in a position to form any definite opinion on the subject. The artificial preparation of such complex compounds as proteins seemed almost incomprehensible. However, the science of organic chemistry advanced rapidly. Thousands of organic compounds were prepared; but these belonged principally to the so-called fatty and aromatic groups. For a long time little was known of the more complex heterocyclic compounds, *i.e.*, those in which the nucleus is composed of atoms, not all of the same kind, arranged in rings, such as pyrrol,



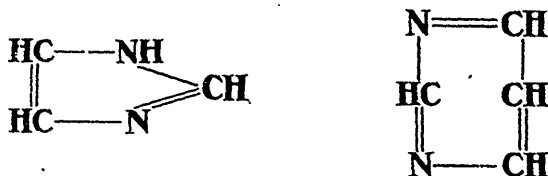
In illustration I may mention that indol has a structural formula formed by grafting pyrrol on benzene:



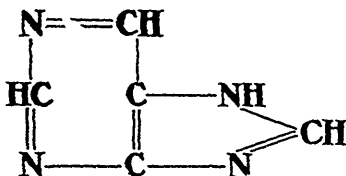
Skatol is a methyl derivative of indol. Tryptophane, a compound amino acid formed by hydrolytic cleavage of most proteins, is also a derivative, formed by condensation of indol and amino propionic acid. Indol is probably liberated from tryptophane by intestinal putrefaction. The investigations of Ellinger and Gentzen, which showed that when tryptophane, given by the mouth or subcutaneously, causes no increase of the indican in the urine, whereas injected into the cæcum it causes marked indicannria, supports this view. It is also supported

by the well-known fact that the colon bacillus in many culture-media produces indol.

Imidazol and pyrimidine are other compounds which take important parts in the molecular structure of many proteins, especially nucleo-proteins. They have respectively the formulæ:

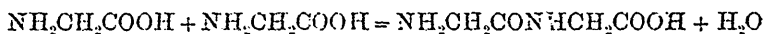


From a physiological standpoint the most important compounds of this class are purine and its derivatives. Purine is formed by grafting imidazol on pyrimidine, as shown by the following formula:



Adenin, guanin, hypoxanthin, xanthin, caffeine, theobromine, and uric acid are derivatives of purine.

Recently much activity has been paid to the study of the chemistry of proteins. It has been shown that the hydrolytic cleavage effected by boiling with dilute acids is practically the same as that produced by proteolytic ferments; and that the cleavage is much more complete than was formerly believed, amino acids instead of albuminoses and peptones being the final products. Moreover, chemists are attempting, with a fair degree of success, to convert amino acids into proteins. Products called polypeptides, containing two to eleven molecules of amino acids condensed into one, have been prepared. Thus two molecules of glycine condense to form a dipeptide called glycyl glycine.



All these polypeptides give the biuret reaction, probably the most important and general of all the tests for proteins; and the higher members of the series much resemble the proteins in their physical properties. It is, therefore, quite probable that polypeptides and proteins have something in common

in structure and that the former are steps in the upbuilding of the latter.

The advances in physical chemistry have taken a part equal to those in organic chemistry in elucidating the phenomena of metabolism and of disease.

The importance of osmosis in explaining physiological processes was recognized by Dutrochet as early as 1826. In 1861 Graham made an exhaustive study of the subject. He tested many substances with regard to their diffusibility through animal and parchment membranes, and found that some substances diffuse very slowly or not at all, while others pass through quite freely. To the former he gave the name colloids and to the latter crystalloids. Graham thought these two classes were distinct, and this view was held until comparatively recent times.

In 1877 Pfeffer published an excellent monograph on the subject of osmotic pressure, in which he gave a history of the development of the subject, and, in addition, the results of a number of quantitative measurements carried out by himself. In his experiments a membrane of copper ferrocyanide was used, supported on a porous earthenware cup. This is permeable to water, but impermeable to many crystalloids; and by its use pure water may be "filtered" out from a solution of cane sugar, glucose, etc. When such a "semi-permeable" cell is filled with a solution, closed, and immersed in water, the latter enters through the ferrocyanide membrane and creates a hydrostatic pressure in the interior of the cell. This is known as the "osmotic pressure."

Ten years later van't Hoff showed from Pfeffer's data that the osmotic pressure is proportional to the concentration of the solution employed, and to the absolute temperature (degrees centigrade plus 273); and in the case of many chemicals the pressure was the same when equi-molecular quantities were dissolved in the same volume. This last generalization, however, was not found to hold for electrolytic solutions, *i.e.*, for such as conduct electricity; but the exceptions were later explained by the hypothesis of ionization, according to which the number of particles—molecules and ions together—is greater in these latter cases than is suggested by the ordinary chemical formula.

Many explanations of the nature of the ferrocyanide membrane have been offered. At first it was thought to be porous, permitting the passage of the particles of water but holding back the larger sugar molecules. Recently, however, as a result of many experiments by Kahlenberg and others, with

different kinds of membranes, this view has been found to be untenable. It has been shown that sodium oleate, a colloid, dissolved in pyridine passes through a thin rubber sheeting such as used by dentists, while sugar and other so-called crystalloids in the same solvent do not pass through to any appreciable extent. It has been found possible to separate by dialysis one crystalloid from another. Experiments such as these have led to the view that osmosis is a solution phenomenon dependent on solvent, dissolved substance and membrane. It is believed that if a substance is to dialyse it must be soluble in the membrane. For instance, crystalloids are diffusible and colloids non-diffusible through bladder tissue and parchment because the former are soluble and the latter insoluble in these membranes. Again a membrane of copper ferrocyanide allows water to pass through because it is hydrated and is therefore capable of picking up water on one side and of liberating it on the other.

This view of osmosis should prove of great value in studying physiological processes, and it has already been applied by Meyer and others in explaining the action of anesthetics. From the behavior of nerve cells in various solutions it is thought their cell membranes contain lipoid substances such as cholesterin, lecithin and protagon. Now ether and chloroform are good solvents of these lipoid bodies, and it is probable this character is a factor in their pharmacological action.

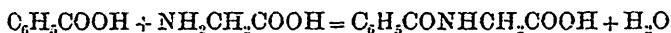
The subject of solution is thus of first-rate importance in studying processes in the animal body. Nowadays the term is held in a much more general sense, solid and gaseous as well as liquid solutions being recognized. The old distinction between solvent and dissolved substance has been given up. Thus we may speak of a solution of a liquid in a solid as well as of a solid in a liquid. For instance, we may say that ether is soluble in cholesterin, and cholesterin in ether.

The action of cell walls in modifying chemical changes will be referred to in my remarks on double decompositions.

The study of catalysis has likewise had a marked influence in the development of physiological and pathological chemistry. Catalytic agents are looked upon as very similar to enzymes. Both are augmentors of the rate of chemical change. Thus ethyl butyrate can be synthesized from ethyl alcohol and butyric acid by the influence of either the enzyme lipase, or the catalytic agent, platinum black. In this connection the preparation of colloidal solutions of platinum, gold, silver, etc., by striking an electric arc between metallic wires under pure

distilled water is of great interest. The solutions so formed have striking catalytic properties and in many respects resemble the enzymes very closely. When heated they coagulate and their catalytic powers disappear; and they can be "poisoned" by the action of prussic acid and many other toxic substances. The physical state of the metal has thus an important bearing on its catalytic properties, and it is probable that the same holds true for the enzymes themselves.

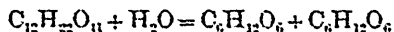
In physiology it is only recently that much attention has been given to the chemical changes taking place in the animal body. One of the first important discoveries was the physiological synthesis of hippuric acid by Schmiedeberg and Bunge in 1876. They found that benzoic acid and glycine dissolved in blood and passing through the kidney formed hippuric acid.



In the chemical laboratory this reaction only takes place when the reacting bodies are heated together in sealed tubes at 160° C. In 1882 another important chemical reaction was determined by Schröder. He found that ammonium carbonate dissolved in blood and passed through the liver forms urea.

Recently it is in the field of study of enzymes that the greatest activity has been shown by physiological chemists. These agents are becoming to be looked upon as having a wide field of action in effecting and augmenting chemical changes in living matter. Some think that an enzyme takes part in every chemical change. This view received strong support from the discovery of Buchner in 1897 of an intracellular ferment in yeast, which causes glucose to break up into alcohol and carbon dioxide, just as the growing yeast fungus does. The isolation by Herzog of the enzyme that causes lactic acid fermentation from the bacillus acidi lactici is also evidence in favor of the same view. The existence of enzymes in cells which apparently take part in chemical changes of the cells is a comparatively new idea and gives much promise in studying the chemistry of the animal body.

Another idea which, if established, will have a tremendous influence in chemical research, is reversibility of the action of enzymes. The proposition has already received much support. Croft Hill showed that maltose will condense glucose into maltose as well as cleave maltose into glucose.



Kastle and Loevenhart observed that the hydrolytic action of lipase on ethyl butyrate can be reversed. Taylor synthesized triolein from olive acid and glycerine by means of a lipase extracted from castor oil bean. He also showed that a jelly-like protein substance can be produced by the action of a proteolytic ferment on a solution of albumoses. These results, together with similar observations of other investigators, such as Emil Fischer, Emmerling, Wroblewski, and Hanriot make it very probable that the great majority of ferment actions are reversible.

The hypothesis that the chemical changes of the cell are caused by enzymes affords an explanation of many of the phenomena observed in dead and living matter. The "ripening" of meat may be looked upon as autolysis due to a proteolytic ferment. The changes which take place in the alveoli during the third and fourth stages of pneumonia are no doubt principally due to enzymes. In phosphorus poisoning the destruction of liver cells, with the appearance in the urine of leucine and tyrosine is probably due to acute autolysis of the hepatic parenchyma. And it appears probable to the writer that the toxic symptoms, frequently observed in acute hepatitis, are due to the same cause.

Inasmuch as the liver is believed to be such an important organ in metabolism, one should expect it to be laden with chemically activating agents. As referred to above, the liver has been shown to have the power of changing ammonium carbonate into urea. It has also been shown by Herter and Wakeman that living liver cells have the power of altering indol and phenol in such a way that they cannot be recovered by distillation. And recently Dakin and Kossel observed that the juice of liver cells rapidly converts arginine into ornithin and urea. These last two reactions are quite distinct in character, the changes observed by Herter and Wakeman being condensations, whereas that noted by Dakin and Kossel, hydrolytic. The writer has recently been investigating the power of the liver as an activating agent in producing chemical changes. One experiment, the power to combine salicylic acid and glycine into salicylyl glycine or so-called salicylic-uric acid, gives promise of being successful.

In studying the chemical changes of the animal body I think it well to approach the subject in a manner similar to that which has been found useful in chemistry in general. The laws which govern chemical changes in a test tube may be

applied to those in a cell. In the chemical laboratory we can accelerate a chemical change by increasing the temperature and retard it by cooling. In most cases a rise of 10 deg. C. about doubles the rate; and this same temperature co-efficient has been recently observed in many reactions involved in the life processes of animals and plants. The elaborate mechanism for regulating the temperature of all the higher animals was no doubt evolved in order that the rates of the vital processes might be kept under control. However the marked influence of variation in temperature on the rate of chemical change may be made use of in nature's fight against disease. In the healthy body enzymes are the accelerators. For instance, hydrogen peroxide, which can be decomposed by heat, is in the animal body broken up by an enzyme called catalase.

In the chemical laboratory light is an effective agent in producing and augmenting chemical changes. I need only refer to its influence on silver salts, and on the action of chlorine on hydrogen, acetic acid and other compounds. In the vegetable kingdom light is essential, and in the animal body also it is probably an important agent in modifying metabolism. The beneficial action of sunlight is probably due to increased metabolic changes.

In the chemical laboratory there are agents which accelerate whole classes of chemical changes. Thus the addition of dilute mineral acids to aqueous solutions accelerates hydrolysis; disaccharides (cane sugar, malt sugar and milk sugar) are hydrolyzed into hexoses, and proteins into amino acids. In the animal body also catalytic agents (enzymes) exist, which do the same work. In the chemical laboratory oxidizing agents change aldehydes to acids, side chains of benzene derivatives to carboxyl groups, etc. In the animal body oxygen with ferments called oxidases effect the same changes. Thus benzaldehyde, C_6H_5COH , is oxidized to benzoic acid, C_6H_5COOH , toluol, $C_6H_5CH_3$, to benzoic acid, and glucose to glycuronic acid.

In studying chemical changes in theoretical chemistry I have found the following classification of value:

- Combinations.
- Decompositions.
- Substitutions.
- Double decompositions.
- Oxidations and reductions.

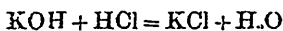
The same classification is also helpful in studying the chemical changes of the animal body.

In this paper I shall limit my remarks to the fourth division, *i.e.*, double decompositions.

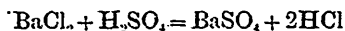
DOUBLE DECOMPOSITIONS.

The term double decompositions is applied in chemistry to a chemical change when two substances react to form two new substances. The double decomposition may be complete or incomplete. It is complete when the reacting substances, mixed in equivalent proportion, are completely decomposed and two new substances formed. The question is, When does this take place? In test tube experiments it occurs in the following:

(a) Neutralization of acid by base and vice versa when neither the acid nor the base is weak.

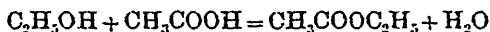


(b) When one of the substances formed is taken out of the sphere of action by vaporization, precipitation or crystallization.



These conditions are uncommon in the animal body.

In incomplete double decompositions there are four substances in the reacting medium, two reacting constituents and two formed by double decompositions.



This is called a balanced action. The mass of each substance formed in the change varies with the concentration of each substance present in the solvent.

This type of change would be very common in the animal body if it were not for special conditions not usually available in the chemical laboratory, to render the double decomposition complete. Nature's method of rendering the chemical change complete is to remove one of the substances formed by absorption or filtration through cell membranes. Thus when pepsine acts upon proteid it is probable that the change would be a balance done if the products of hydrolysis were not continually propelled into the duodenum. Again in the intestine the continuous absorption of glucose, galactose, amino acids, etc., renders the hydrolysis produced by the ferments of the juices complete.

With regard to the double decompositions which take place

in the blood serum and cells it seems to me that cell and nuclear membranes play an important part. A cell membrane by allowing one substance to pass through while preventing others may render a double decomposition complete. As these changes are usually hydrolytic or synthetic, one would expect concentration to favor the latter. It is, therefore, quite probable that hydrolytic changes predominate outside the cells and condensations in their interior. In other words, the condensation enzymes are principally intra-cellular, the hydrolytic extra-cellular.

A SUCCESSFUL CASE OF CAESAREAN SECTION.

BY HUGH C. McLEAN, M.B., GUELPH, ONT.

I have recently had in my care a patient who for the past six years and half has been an invalid, and quite unfitted to attend to her ordinary household duties.

On the approach of the termination of her period of gestation she was brought to the general hospital here and placed under my care. Following is the history of her case:

History.—Mrs. A. A—, aged 29; born in Wales; multipara; last menstruation June 13th, 1906. Had a child born six and a half years ago after an extremely difficult, tedious labor lasting some sixty hours and completed by instrumental delivery. Following the confinement she necessarily remained in bed some twelve weeks, suffering from prostration, subinvolution, and a certain degree of prolapsus uteri. Her baby was born alive. Some eighteen months later she aborted at about three months. A few months later another abortion occurred at about the same period. Her trouble was then diagnosed as endometritis, and she was sent into the Cardiff Infirmary, where she underwent an operation, the particulars of which I was unable to get, but a ventral fixation was certainly done. Since that time she has been quite incapacitated and suffered a considerable degree of abdominal pain and “dragging sensations” along the lower portion of the abdominal wall.

Examination.—18th February. Fundus, 27.50 cms. above pubis. Intercrestal, 29 cms. Interspinous, 28.25. Obliques, r and l, 20.50 cms. External conjugate, 18 cms. Vaginal, 7.50 cms. In the right vaginal fornix a large, firm, irregular mass protruded on the canal, reducing its diameter to 7.50 cms., as above. The cervix could not be reached. Presentation, vertex, L.O.A. Fetal heart sounds 132 to the left of and below the umbilicus.

The case was seen and examined with me later by Dr. F. Walsh, of this city, and it was decided to await the commencement of labor and if no descent occurred to do a Cesarean operation.

After fourteen days in the hospital, during the last two or three of which vague feelings of pressure across the back in the lumbar region became somewhat rhythmical and the patient suffered severely from upward and outward pressure on the ribs, we determined to operate, which we did on Sunday afternoon, March 3rd.

Operation.—An incision, 12.50 cms. in length, was made in

the median line of the abdomen, from the umbilicus towards the ensiform cartilage, a few bleeding points being caught with pressure forceps. The abdominal wall was very thin, and it was only by careful watching that the peritoneum could be distinguished from the fascia.

A special gauze sponge, a yard long and five inches wide, was now packed in between the everted lips of the abdominal incision and the fundus uteri. The fundus was now crowded up by an assistant, who grasped firmly the lower uterine segment with both hands (through the abdominal wall), and a vertical incision was made over the fundus, about the same length as the one above mentioned.

Blunt dissection carried this incision down through the uterine tissues till the membrane was reached. A hand was now passed between the uterine mucosa and the membranes, to free the membranes and the placenta. By this time the liquor amnii escaped; the left hand was passed into the cavity of the uterus, the left foot of the infant was grasped, and a quick delivery followed, the head being extracted by the Veit-Smellie method. The infant was at once handed to an assistant with its head hanging downwards.

The placenta and membranes were quickly "twisted" out, the uterus swabbed out with dry gauze compresses, the cervix dilated to admit two fingers, and the closing of the uterine incision was carried out as follows: Five "deep sutures" of No. 2 chromic gut were placed at intervals of one and a half centimetres, extending through all the uterine tissues except the mucosa. These had their points of entrance and exit about one half centimetre from the margins of the wound.

The hemorrhage was practically controlled by these sutures. Between these were six similar sutures, "half deep," and a row of Lemberts of No. 1 chromic gut completely buried the other—the "deep" and the "half-deep" sutures. The gauze sponge was now removed, and the abdominal cavity flooded with normal saline solution, after which the Fallopian tubes were double ligated and sectioned. The abdominal incision was closed with continuous cat-gut sutures in peritoneum, interrupted sutures of the same material in the fascia, while the subcutaneous tissues and skin were coapted with subcuticular silk-worm gut, a few horsehair sutures being used in the skin. The operation lasted about forty minutes.

The child, a boy, was readily resuscitated. He weighed 3,528 gms. (8 lbs.), and has done well ever since birth.

After-History.—There was a continuous elevation of tem-

perature, 99 deg. to 102 deg., until the eleventh day following operation, when I gave an intrauterine douche, removing some particles of debris. The temperature then dropped to normal and remained there. Sutures were all removed on the ninth day, the wound being perfectly healed, and on the sixteenth day the mother was up out of bed, and has been up daily ever since.

On the nineteenth day the history was discontinued, and at this date mother and baby are both well.

I am indebted to Drs. Walsh, K. MacKinnon, Suiner and Kilgour, who gave such splendid assistance at the operation, and to the nurses, for their excellent after-care of the *patients*.

NOTE.—The operation done is the one described and performed by Drs. Marcoe and Davis, Surgeons to the Lying-in Hospital, 2nd Avenue, New York, while the tube sectioning is the idea of Dr. Murdoch Cameron, of Glasgow.

ACUTE OR SPONTANEOUS HEMORRHAGES IN THE NEWLY-BORN.

BY HENRY T. MACHELL, M.D., TORONTO,

Associate Professor of Obstetrics and Pediatrics, University of Toronto; Physician to the Hospital for Sick Children and to the Infants' Home.

Two varieties of hemorrhage in newly-born babies are met with occasionally: 1st, traumatic, or accidental, due to external causes or injuries, such as forceps or long-continued pressure on the head in the pelvic canal; 2nd, spontaneous or acute hemorrhage, and not caused by any apparent injury during birth. The bleeding is, as far as can be seen, spontaneous or without cause.

It is only the latter hemorrhage to which I wish to draw your attention to-night.

Within the last ten years I have seen several cases in my own practice, and have the notes of other cases seen in the practice of my confreres.

The disease is characterized by hemorrhages from widely different parts of the body as: Umbilicus, bowels, stomach, bladder, the skin, cellular tissue, muscles; internal organs, as liver, spleen, suprarenal glands, etc. There may be one or several locations from which the blood comes. It may be merely an oozing, or there may be sufficient blood lost in the

space of a few hours to blanch a baby. It usually appears between the first and seventh day, and a large proportion of cases end fatally.

The following are selected from fourteen reports of cases given in the original paper.

CASE I.—Baby W., born 12th January, 1896, full term, normal labor, female; weight, 8 1-2 lbs. Father and mother well and healthy. Five other children, well and strong. Baby nursed well. In 36 hours after birth blood was noticed on binder. It was to be seen coming from around the cord at the skin margin, where some clotting had already taken place. Slight pressure stopped it, but on removing the pressure oozing continued. Within 12 hours blood was seen coming from the vagina, and within 12 hours more, or 24 hours from onset of bleeding, vomiting of bloody mucus, which continued almost until the baby died on the fifth day, three days from the commencement of hemorrhage.

Treatment.—Tannic acid compresses, and hot tannic acid solution as a vaginal injection.

The major portion of the blood came from the stomach; even this was small in amount.

CASE III.—Baby G., born 10th May, 1900, full term, male; weight, 10 lbs. Father well, but mother somewhat nervous, but never had any serious illness. One sister alive and healthy. Baby nursed and seemed well until hemorrhage began at the end of the second day. It came from the bowel and 12 hours later from the stomach. Nose-bleed and purpuric spots on arms and legs occurred before the end of the third day. Temperature, 100 to 101. No jaundice. Seen by Dr. Starr on the fourth day.

Treatment.—Normal salt solution injected into the bowel and tannic acid solution into the nostrils.

Died on the fifth day.

Uneventful recovery from the confinement. Confined 30th December, 1903, of a healthy child.

CASE V.—Baby C., born 7th December, 1903, full term, first baby, male; weight, 10 lbs.; chloroform and forceps. Father and mother well and healthy. Baby well and strong and nursed within a few hours. Early in the second day hemorrhage was noticed coming from the margin of the cord, where it was beginning to separate from the abdominal wall. At first it was only a slight ooze. Within six hours it was oozing freely, in spite of compresses of tannic acid and, later, styptic cotton, changed frequently. Within twelve hours blood

was seen in the stools and petechial spots on the legs. Temperature never less than 103 F. from the time bleeding was first noticed.

Treatment.—Calcium chloride, given internally, and rectal injections of normal salt solution.

Death in twenty-four hours from the beginning of the hemorrhage. Most of the hemorrhage seemed to come from the umbilicus. All told there did not appear to be sufficient to cause the baby's death.

The short illness, the persistently high temperature and the comparatively small amount of blood lost are suggestive of an infection.

CASE VI.—Baby M., born 19th March, 1906, full term, chloroform and forceps, male, first child; weight, 6 3-4 lbs. Father and mother of highly neurotic temperament. Baby nursed within six hours and seemed strong and healthy. A small abrasion was made by the blade of the forceps over right frontal bone, about 1-3 of an inch long. Only the outer cuticle was cut through. Little or no bleeding occurred from it. Both eyelids seemed swollen and everted, as if from intrapelvic pressure. Baby cried when slapped. In the afternoon of the same day a small cephalhematoma was noticed over most of the right parietal bone and also some slight discoloration over the left upper eyelid. The discoloration was thought to be due to the trauma of labor.

21st. Baby cross and fretful and apparently in pain all night and markedly so on touching the tumor of the scalp. Tumor increased in size, stain of eyelid more marked, but no thickening, swelling or bogginess.

22nd. Baby did not sleep all night. He kept up a constant fret all night, and while he took water readily would not nurse. At 9.30 a.m. both upper and lower lids of left eye were much discolored, swollen and boggy and a thin bloody discharge was oozing between them. Calcium chloride was ordered by the mouth. Later in the day Dr. Reeve, Dr. W. P. Caven, and Dr. Adam Wright saw the patient with me. As the calcium chloride had by this time upset the stomach, it was decided to give it per rectum, and adrenalin solution 1-1000 in gtt. i doses by the mouth and gelatin 2 per cent. solution every hour or two, also by the mouth.

9.30 p.m. Eyelids were more swollen and bursting in appearance, everted, and oozing. Vomiting began after a few doses of gelatin. This preparation was not a nice one. It was yellowish, thick, gluey and smelled like a glue-pot. It was

therefore ordered to be injected into the bowel, 1-2 oz. every hour. Face very pale and in marked contrast to the discolored (almost black) and bulging left eyelid. Temperature, 102 F.

23rd, 9 a.m. Had hemorrhage from the bowel, probably not more than a couple of drams, but almost immediately afterwards he became very quiet and seemed to the nurse to be dying. I had to look closely to see that he was breathing. Saline injection, oz. i, to be given every hour. Swelling over lids possibly not so tense as yesterday. Scalp apparently stripped up more, so much so that the lobe of right ear was pushed upward and forward. Temperature, 100 F.

24th, 10 a.m. Temperature, 100 2-5 F. Had three mild convulsions during the night. Vomited after each dose of gelatin, which was then discontinued, and saline enemata to be tried again.

26th, 10 a.m. Takes six or seven dropperfuls of whey at one time. More bluish discoloration about forehead above and in front of the right ear. Temperature, 100 1-2 F. 6 p.m.: Temperature, 101 F. A red-colored patch, 1 1-2 x 3-4 of an inch, appeared on the left forearm, which fluctuated. Ordered gelatin solution dr. ii by the mouth and oz. i by the rectum.

29th. Takes dr. iv whey every two hours and digesting it. No fresh hemorrhages.

April 25th. Wet-nurse obtained. Baby nurses vigorously.

May 3rd. No fluctuation under the scalp. Discoloration of eyelids has disappeared. Lids quite normal in appearance. Corneal opacity marked.

CASE X.—(Practice of Dr. A. H. Wright.) Baby —, born 30th December, 1906. Apparently healthy. Hemorrhages commenced in latter part of first day, especially under the skin, from the mouth and from intestines.

Treatment.—Gelatin by mouth, calomel, castor oil, adrenalin in minim doses of 1-1000 solution (also by mouth). After two weeks much improved. Apparently recovering rapidly for several days. In fourth week grew worse, had general jaundice, gradually sank and died twenty-nine days after birth.

CASE XI.—(At Burnside Hospital.) Mother confined on March 21st, 1906. Labor twenty-one hours' duration. Mother Russian, married, twenty-five years of age; forceps delivery.

March 23rd. Child vomited black fluid. Temperature, 98 1-5 F. There was also large submucous hemorrhage.

25th. Vomited black fluid containing blood. Normal saline given per rectum, also injection 15 c.c. gelatin (two per cent. solution). Blood in stools.

26th. Again vomited black fluid. Temperature, 101 4-5.

27th. No vomiting. Temperature, 99 4-5. Stools more normal.

28th. Rapidly improving. Before administration of gelatin child was jaundiced, sinking rapidly, but left the hospital greatly improved.

Causation.—The following have been mentioned: Hemophilia; septic infection; syphilis; injuries to head, which result in cerebral hemorrhages; too early ligation of cord; plethora; debility; ulcer of stomach or bowel; acute fatty degeneration of the new-born; jaundice; feeble coagulability of the blood; deficiency or defect in the walls of the capillary vessels.

Onset.—It will be seen that with two exceptions the bleeding began before the end of the third day. In six it began on the second day; in one on the third day, and in two before the end of the first day. The infants had all been well with one exception, and as far as could be seen there was nothing abnormal until bleeding began.

Character.—In all the cases the bleeding began in a gradual manner.

Amount.—It is difficult to estimate the amount of blood lost in any given case. In some of the cases the amount to be seen was not enough to blanch a child, let alone destroy it. In two the amount lost was large.

Site of Hemorrhage.—It may come from any part of the body: In two cases it came from the umbilicus; in six cases from the stomach; in eight cases from the bowel; in six cases under the skin; in one case from the mouth; in one case into muscle; in one case under the scalp; in one case under cellular tissue around eye-ball; in one case into abdominal cavity; in one case into suprarenal capsules, etc. The bleeding may, and usually does, come from more than one source. In none of the above cases was it confined to one site.

Temperature.—In nine cases it was not taken. In one it was normal, in three it was 98 1-5 to 102, and in one it was over 103 F.

Loss of weight.—Every baby seemed to shrink very soon after the beginning of hemorrhage. The shrinking seemed to be out of all proportion to the amount of blood lost. This was noticed in the cases in which no elevation of temperature occurred, as well as in those with a fairly high fever.

Duration of Disease.—It is usually of brief and definite duration: One case died on the third day, ill one day; one case

died on the fourth day, ill three days; two cases died on the fifth day, ill three days; one case died on the tenth day, ill nine days; one case died on the twenty-ninth day, ill twenty-eight days. The baby who died on the twenty-ninth day had marked jaundice during the last week. It is possible that the condition which gave rise to the jaundice, rather than the hemorrhagic condition, caused its death.

Frequency.—The disease is not of frequent occurrence. It appears to be more frequent in hospital than in private practice. "Out of 6,700 deliveries at the Boston Lying-in Hospital, 45 cases occurred, a percentage of .67, or about 2-3 of 1 per cent., while in the out-patient department among 4,000 deliveries, there were 4 cases, or 1-10 of 1 per cent.

"This comparative prevalence in the hospital has no connection with puerperal septicemia, as the disease (septicemia) is practically free from the Boston Lying-in Hospital, but it occurs independently of it, just as thrush may get a foothold and flourish in a hospital although not common in outside practice."

In the Burnside Hospital, Toronto, there are records of four cases, particulars of which have just been given.

Only one case has been noted at Grace Hospital, Case X.

Post-mortem Examinations.—None were allowed in my own cases. In one, Case No. XII., at the Burnside, where a post-mortem was obtained, subdural hemorrhages at the base of the skull (the child was delivered by version), hemorrhage about the brachial plexus on the right side, hemorrhage into the abdomen from rupture of a hematoma on the under surface of the liver, also an unruptured hematoma and hemorrhage into both suprarenal capsules.

Townsend had looked up the records of 81 autopsies. In the majority of cases nothing abnormal was found, except the hemorrhages and the resulting anemia. In a very small number of cases the following diseased conditions were found: Syphilis, enlarged spleen, enlarged liver, inflammation of the umbilical and portal veins, and acute fatty degeneration.

Diagnosis.—There was little difficulty in making a diagnosis in these cases. The bleeding began within 24 hours in two cases and before the end of the third day in ten cases. In the cases where it came from the umbilicus it was oozing in character rather than a free flow, as if the ligature had slipped. Bleeding from a loose ligature, moreover, practically always occurs within the first hour or two.

In none of the cases was there any evidence of a septic condition in either mother or child.

One naturally thinks of hemophilia where there is uncontrollable hemorrhage in young children.

The fact that hemophilia never, or rarely ever, shows itself before the end of the first year should help one to make a diagnosis without much difficulty.

The hemophilic tendency is commonly hereditary and occurs usually after slight or severe traumata.

In none of these cases was there any history whatever of hemophilia. None of the parents had ever heard of the term "bleeder."

None of my patients who survived have since shown any evidence of hemophilia. In Case IV. the cord dropped off on the seventh day, and in Case VI. on the eighth day, without bleeding from the stump in either case.

Prognosis.—The greater and the more sudden the hemorrhage, the less the chance of the patient surviving. That is a broad rule which I think holds good in the large majority of cases. In Case VI. a very large amount was poured out under the scalp, how many ounces is a matter of conjecture.

Townsend's cases, with a mortality of 79 per cent., should be borne in mind when questioned as to prognosis in any given case.

In these cases of spontaneous hemorrhage one can safely predict that they will *not* have repeated hemorrhages in after years. In the cases of hemophilia one can just as safely assert that they *will* have recurrent hemorrhages and that they are likely to succumb before they reach adult life.

Treatment.—In one of these cases the course was so acute that one would not expect much relief from any form of treatment. This child seemed to die of sepsis rather than from the amount of blood lost. Whether gelatin would have afforded any relief I cannot say.

A great many remedies have been used in the past in these cases—many of them empirically. The three which are most used at the present time are calcium chloride, solution of adrenalin, and gelatin. The first-named was given in Case V., without any apparent effect. Adrenalin and gelatin were both given internally in Case VI., and he recovered, whether on account of, or in spite of, either remedy, I do not know. It was a case, however, in which stotic symptoms were at a minimum and in which styptics appeared to be indicated.

Gelatin appears to be able to coagulate the blood of bleeding surfaces. A good illustration of this effect occurred at the Hospital for Sick Children in October last. Gelatin was given

to a boy aet. 10 years, suffering from hemophilia almost since infancy. Shortly after entering the hospital free nose-bleeding took place and drachm doses of a 2 per cent. solution were given every hour. The bleeding ceased in a few hours. In twenty-four or thirty-six hours afterward, in attempting to get a few drops of blood from the lobe of the ear for the purpose of making a blood count, it was found that blood could not be made to flow either from the ear or finger. This was a boy who bled on the slightest provocation from a scratch, or bruise, or into the larger joints without any traumatism. Yet after the gelatin not a drop of blood could be obtained from his ear or finger.

In Case No. VI. no improvement could be seen after the persistent use of gelatin and adrenalin for about 24 hours. As soon as vomiting began, 1 1-2 oz. of a 2 per cent. gelatin solution were injected into the bowel and repeated three times, when the rectum became irritable. It was then given again by the mouth, and about 48 hours after commencing it some little improvement was noticed, or to be more accurate, the baby appeared to cease getting thinner and paler. For external use, such as a bleeding navel, a 10 per cent. solution is advised by Abt.

The hypodermic injection of gelatin has been advised by a number of authors, but Abt sounds a warning against its use in this way. He gave a subcutaneous injection of 2 oz. of 2 per cent. solution to a feeble-minded girl aet. four years. Her temperature rose to 100 2-5 F. and later to 101; the pulse increased from 92 to 140, and respirations from 24 to 36. The child was restless, greatly prostrated and extremities cold. This condition lasted for 24 hours. Two other children, aged nine and two years, were also given subcutaneous injections, with a similar increase in temperature, pulse and respiration.

He then experimented with gelatin subcutaneously in rabbits. One rabbit was not inconvenienced by injections of 60 c.c., but its blood clotted in 48 seconds before, and in 12 seconds after, injection. One was given 60 c.c., then 250 c.c., and, finally, 500 c.c., and died some hours afterwards, having lost weight rapidly. One was injected with one injection of 500 c.c. of a 5 per cent. solution, and died in three hours after.

His conclusions were:

First.—Subcutaneous injections of sterilized gelatin solution are capable of producing toxic symptoms in children.

Second.—Large doses of 5 per cent. solution of gelatin caused the death of rabbits.

His explanation is that the gelatin is manufactured from the bones of animals; that the decomposition which takes place in these bones gives rise to cadaveric poisons; that these poisons are ptomaines is evidenced by the elevation of temperature and the gradual condition of prostration and collapse; that ptomaines may be contained in solutions which are subjected to high degrees of heat, the latter not altering their chemical nature nor their toxic property.

One has only to smell the gelatin to be reminded of a glue factory. Even when Merck's white gelatin is used, though this is probably the best on the market, its odor is not suggestive of an article which is sterile.

For that reason, if for no other, one would hesitate to use it subcutaneously. Abt thinks it would be difficult to state what a safe dose of gelatin would be, given subcutaneously, to a newborn infant, but that the local use and the use by the mouth are warmly recommended.

I think if the stomach rebels at prolonged dosing, as it did in Case VI., one should not forget that absorption takes place rapidly from the rectal walls.

This would seem to be a much safer method of introducing gelatin than the subcutaneous one.—Abstract of paper published in *Canadian Journal of Medicine and Surgery*.

MEDICAL THOUGHTS, FACTS, FADS AND FANCIES.

BY JAMES S. SPRAGUE, M.D., STIRLING, ONT.

Author "Medical Ethics," etc., etc., Examiner Materia Medica,
Coll. Phys. and Surgeons.

Written especially for THE CANADIAN PRACTITIONER AND REVIEW, and if republished
by other Journals true copies must be sent to the author.

At my request, a very learned, yet not professional friend, aged 73 years, resident of a prominent frontier town of our province, recently sent the attached poem to me, and in verification of many statements he has made in reference to the employment of quack preparations by our deceased brothers, in too many instances, I have the endorsement of my venerable father, who, aged 91 (and is not dead at the top), was closely associated in business with the author and with three generations of his family, once residents of Prince Edward County. Once or oftener it is well that we have the views of a non-professional acquaintance to tell us how our fathers looked—"lest we forget." If you, dear brother M.D., were capable of rivaling the enclosed poem, and its title would be, "The Village or Town Doctor of To-day," could you say, "I am better than my fathers"? Would you not feel shocked if some poetic friend, knowing some of the quack medicines you employ and prescribe, would tell the truth about you and your *materia medica*? What would that friend say about our almanacoid medical publications? Your personality? Brother, quackery is not dead. However, read very carefully the poem, for the author believes in this: "Hew to line, let the chips fall which way they may." Anyway, it is well to see ourselves as others—*non-professional others*—see us. Self-study is a good pastime. Try it now, when reading and after reading the poem. Can you say: "Thank God, I am not as other men"? Reader, look in "ye glass of tyme," have an hour's talk with yourself, then look at yourself in the glass of the twentieth century. Make some reforms—make them now, while you are thinking about it and this poem. Why should you be salesman and "ad" writer for "Co. Tr. Swamp Bark (Smith)"?

One fact is this, the "olde tyme doctor," with all his faults, had an honorable position among men, and the respectability you enjoy he gave to you. Of him it was said, and well said:

"Where blossoms life's sweet bud at blush of day,
Where withered rose at evetide steals away

On the south wind, in joy and care,
An *uncrowned king*—the doctor's there."

Another fact he taught us is:

" There's a lot of things that never go by rule;
There's an awful lot of knowledge
That you never get at college,
There's a lot of things you never get at school."

Anyway, he, as "an all round good man," was better than you are in many respects, and he knew his *materia medica* well, even if his few errors are named herein.

" It is better to make a mistake in trying to tell the truth,
Than never to tell the truth for fear of making a mistake "

THE MEDIEVAL MEDICINE MAN.—YE OLDE TYME VYLLAGE
DOCTOR.

Partly as observed or experienced by the author, and partly as narrated sixty-five years ago, to the author by his parents and grandparents, who all had noticed or experienced in their lifetime the facts they related, or had received the correct information from their parents and their grandparents; therefore this poetical legend, written by request, is a perfect, life-like pen and ink descriptive picture of Ye Antique Village Doctor, and his "Modes" and "Means," schemes and customs, extending, possibly, as far back as the sixteenth century, with no allusion whatever to physicians of the present golden epoch.

Sojourning where enchanting scenes of childhood met my gaze,
Surrounding sites reflected, startling reminiscent rays
That brought to memory's fond review, vast visions of the past,
Life's "morning" hopes of happiness that "evening" sorrows
blast,

And end in death at last.

Forgotten folly, freak and fun, re-occupied the brain;
In mystic recollection-dream, I lived a boy again,
And in the phantom-haze beheld him versed in human ills,
Who posed as village doctor, knight of sticking salve and pills,
Amidst the hills and rills.

Appeared in ye brass-button coat, high-collared "cutaway,"
 Boots, belt, tie, gloves, and "dicky" added tone to his array,
 Vest corded-camlet, silken "tile," pants corduroy, buff-shade,
 Of full inflated "bosom," country craze in that decade,
 That caught the modest maid.

He wore his wonted, winsome smile, for rich and for the poor,
 Betrayed bewitching courtesy where pay is prompt and sure,
 And had retained his hearty shake, with puny, physicked soul,
 Who wasted wealth on malady no doctor can control,
 Nor shun the "Shallow Shoal."

He drove a knee-sprung, Tippto nag, stiff, steady in its jog,
 Of step so uniform each joint seemed set with wheel and cog,
 While thistles decorated mane, that stemmed the gusty gale,
 Bunched-burs bedecked the foretop, and pea-straw adorned the
 tail,
 Seized for debt at forfeit sale.

A country call, to come at once, he always answered quick,
 Then in his meekly, manly manner sweetly soothed the sick,
 And oftentimes when departing low and lovingly he said,
 That only for his prompt response the patient's life had fled,
 And tears with others shed.

Each month his itemized account, in full, was sure to come,
 Not merged all into one condensed, incomprehensive sum;
 If charges were excessive, blushes hid behind his "smirk,"
 To veil fears of detection that in guilty conscience lurk;—
 Ancient trick to trouble burke.

Complaisant, gracious, generous, subscribed to every want;
 When called, or sent, he freely went to pauper's hovel-haunt;
 To church at week-day prayer, was there, and let his voice be
 heard,
 And bills, if paid on Sunday, only fools, he said, demurred;
 Too often it occurred.

In cases where 'twas naught but scare, when pulse the doctor
 felt,
 Magnesia aqua, tinctured, he prescribed, and deftly dealt,
 Then ordered table-spoon full dose, each hour for the spine,
 To be continued strictly 'till he called again at nine,
 With milder anodyne.

Occasion in a wealthy home, he never deemed it wrong,
 To practice tact, that many lacked, "attendance to prolong,"
 In which he oft succeeded well his faithful friends among,
 And diagnosed dyspepsia as congestion of the lung;
 And many a heart he wrung.

Might mince-meat man of medicine, if "spotted" spooning
 'round;
 Possessed sufficient calibre himself, to cover ground;
 The ailments flesh is heir to were by him all understood;—
 Itinerant empiric meet, the doctor never would;
 One of stone, or wood, as good.

To dire disease he failed to cure he gave a Hebrew name,
 In sporting he was leader of each antiquarian game,
 And claimed to be professionally wise, and very great,
 But born, 'twas thought, too early, or alas! conceived too late,
 With brain not over weight.

Used Opodeldoc, Honey Balsam, antidote for germs,
 Pukes, plasters, Wister's Pectorial, and Vermifuge for worms,
 Unguentum, Radway, Oil of Spike, Mustang for women's woes,
 With Fanstock, Asafetida, and drugs nobody knows,
 Prescribed for deathly throes.

Pond's pain destroyer, Brandreth's pills, Magnetic ointment,
 rum,
 Hive syrup, Brown's Emulsion, bark and gum, of spruce, and
 plum,
 Medicamentum, Paregoric, Lightning oil for aches,
 With Godfrey's Cordial, a Sovereign balm, and remedy for
 "Snakes,"
 That thirst for liquor slakes.

Goose oil, internal linament, eye-salve, herb, weed, and root;
 The bandage, draft, and poultice, he applied from Lead to foot,
 Then "tapped" the arm to ascertain if blood was rich and red.
 And bled, and blistered, 'till a fellow might as well be dead,
 When such a life is led.

He bled the fat, to make them lean, the thin to make them stout,
 For pimples, tumor, inflammation, abscess, ague, gout,

Lumbago, salt rheum, rickets, ulcer, vertigo, catarrh,
 Colds, cancer, wen, consumption, and sent many "Cross the
 Bar,"

To radiant realms afar.

Bled, too, for gangrene, dropsy, sprue, hives, chicken-pox, and
 sprain,
 Piles, whooping-cough, itch, asthma, chill, croup, gripes, and
 gravel pain,
 Rheumatics, measles, milk-leg, mumps, fits, fevers, running
 sore,
 Boil, bunion, cramp and carbuncle, and scald-head by the score;
 Barbers bled in times of yore.

Steele's liniment, internal, mentioned, neighbor-nurses told,
 Would stop the movement of the bowels, and harmlessly with-
 hold

For twenty days; and during term, none helpless need to shift,
 And every day escaped the awful suffering from the "lift";—
 They thought it Heaven's gift.

If bleeding, broth, and blistering the patient could endure,
 Next calomel, and jalap gave, that either kill or cure,
 Then mouth, if sore, the molars loose, and bile the powders
 drew,

The cottage he placarded, "Patient likely to pull through,"
 None doubted that he knew.

From retrospection here portrayed, the inference may be drawn,
 Of doctor's skill and practice, in ye periods past and gone,
 All handed down, in verbal, and historical relays,
 Delineated in this sketch, of doctor's wiles and ways,
 In dark primeval days.

*"Medicus in omne aevum nobilis;
 et homo dignus et fervidus
 ad omnia paratur."*

Selected Articles.

PYELITIS COMPLICATING PREGNANCY.*

BY H. MEEK, M.D., LONDON, ONT.

I would like to have it distinctly understood that in this paper I am not dealing with an acute manifestation of a pre-existing chronic inflammation of the pelvis of the kidney, which existed before the woman became pregnant, or one that has developed from calculus or some other cause entirely independent of pregnancy, but an acute inflammation which develops during pregnancy, and is dependent in some way on the pregnant condition for its causation, and in some cases partially subsides before completion of gestation, and where usually all signs of the inflammatory process pass off in a few weeks after delivery.

In a paper read before this Association in January, 1891, I gave notes of a case of this kind which I had under my care, a short time previously, and in these notes pretty accurately described a condition which was then new to me. This paper was not published, and as a consequence Reblaud, to-day, gets the credit of having first accurately described the condition, in a paper read by him at the Surgical Congress in 1892, or more than one year later than the date of my paper.

CASE II.—Mrs. T., aged 25 years, in her second pregnancy. I had attended this patient in her first pregnancy and confinement in 1893, and the pregnancy, labor and puerperium were normal in every particular. I first saw her in her second pregnancy, March 10th, 1897. She had last menstruated on December 8th, 1896. Examination of her urine at this time, March, 1897, was negative. On examination of the abdomen on April 15th, the uterus could be felt well above the pubes, and seemed larger than one would expect for the period of pregnancy. The fundus seemed more to the right side than usual. At this time she was complaining of some vague abdominal pain and some frequency in micturition. On May 3rd she was out in the rain and got her feet and skirts wet, and on May 4th, about five months from date of last menstruation, she was seized rather suddenly with severe pain in the back over the

* Read before the London Medical Association, December 10, 1906.

right kidney, with frequent micturition, bearing down in the pelvis, and the passage of large quantities of urine. Temperature was normal, the pulse was increased some in frequency. Her urine was found to be acid and contained pus. On May 5th the evening condition was about the same. Her temperature had risen to 100 deg. F. On May 6th a catheter sample of urine showed the following: Reaction, acid. Pus cells numerous. Epithelial cells. No casts. Quantity reported by nurse for twenty-four hours was ninety ounces.

From this time up to the end of July following, this patient had frequent recurrences of pain and elevation of temperature at times reaching 102 deg. F., these attacks lasting for several days, and at times requiring morphia to relieve the pain.

During this period of nearly three months she was confined mostly to her room, and in bed during the acute attacks. She emaciated considerably, and at times the question as to the advisability of emptying the uterus was seriously considered. From the end of July, however, she began to improve, and this improvement continued, although she was unable to get about much. On September 17th, labor pains came on about noon, and after a normal labor, a well-nourished female child was born at 9 p.m.

The presentation was a head, and the position L. O. A. Her puerperium was normal, and on November 4th, a sample of urine not taken per catheter, showed only one or two pus cells. An examination of the urine subsequently in August, 1898, showed a complete absence of pus.

In 1900 I attended this patient in her third pregnancy and confinement, the pregnancy, labor, and puerperium being normal, there having been no recurrence of the urinary trouble. The treatment of this case during her illness from the pyelitis complicating her second pregnancy was rest, diet largely milk, occasional doses of morphia for the pain, salol and quinine.

This patient passed through her fourth pregnancy, labor and puerperium in 1902 without any trouble.

In looking up the literature on the subject, I find in some of the recent text-books on obstetrics, Edgar, Williams and Webster, brief reference made to the disease under the heading "Pyelonephritis in Pregnancy." Hirst also briefly mentions it under the heading, "Pyelitis in Pregnancy."

In other recent works no mention is made of the disease. The best recent article on the subject I have seen is a paper by Cragin, published in the *New York Medical Record* of July 16th, 1904.

Cragin claims that the condition is not rare, he having personally seen ten cases in four years. He appears to think, however, that the disease is frequently not recognized by either the general practitioner or specialist.

Quoting from Cragin's paper, "The etiology of the condition, according to Vinay, seems to depend on two factors. (1) Compression of the ureter by the pregnant uterus. (2) Infection of the urinary tract above the point of compression."

"From the record of autopsies on pregnant women by Olshausen, Stadfield and others, it has been proven that compression of the ureter with resulting dilatation does occur in pregnancy, and that the right ureter is the one most frequently compressed and dilated."

In my three cases reported the disease was right sided. Cragin says that in all of his ten cases and in all authentic cases which he could find reported the lesion was primarily right sided, and usually remained confined to the right side.

In eight of the ten cases reported by Cragin the position of the head was noted and in seven of these it was in the right oblique diameter of the pelvis.

With regard to the second factor, "infection of the urinary tract above the point of compression." Irritation of the mucous membrane by the dammed-back urine would naturally render it more susceptible to infection, but as to whether the infection is an ascending or descending infection there is some difference of opinion. "Reblaud and others believe that the infection is caused by organisms being eliminated through the kidneys, and along the urinary tract, and in some cases by direct transmission to the pelvis of the kidney from the contiguous intestine." In my own cases, as there was no evidence of cystitis preceding the onset of the symptoms referable to the pelvis of the kidney, I must naturally infer that the infection was a descending one.

"In all reported cases in which a bacteriological examination of the urine was made, with one or two exceptions, the infecting organism in the 'pyelitis of pregnancy' was found to be the colon bacillus."

In my three cases the period of pregnancy at which the pyelitis started was between five and six months. Cragin says that it usually occurs between five and eight months.

In the history of the cases I have reported, the diagnostic symptoms of the disease have been, I think, sufficiently dwelt upon. There is one fact, however, that Cragin has pointed out,

that should be kept in mind, namely that at the very onset of the disease no pus may be found in the urine, nothing, perhaps, but a trace of albumen and a few hyaline casts. Pus, however, soon appears in varying quantities.

I cannot see how, if a careful investigation of the case is made, the disease could be mistaken for salpingitis or appendicitis or typhoid fever, yet in the hands of a careless physician such mistakes may occur. Possibly, too, some cases are mistaken for cystitis, but in cystitis urination is frequent and painful, and the urine is alkaline, while in pyelitis, urination though usually frequent, is not painful, and the urine (although containing considerable pus), is acid, and besides, there is pain and tenderness over the kidney.

Judging from my own cases and the cases reported, the disease called "pyelitis complicating pregnancy," with which this paper deals, should have a favorable prognosis under proper medical treatment.

From my personal experience I agree with Cragin, when he says that "the interruption of pregnancy is seldom, if ever, necessary." The medical treatment I would favor, in the light of past experience, and present knowledge of the subject would be rest in the recumbent posture, fluid diet, largely of milk, and large quantities of water. Laxatives and saline purgatives to keep the intestinal tract cleared out. Urotropin in grains v, doses about every four hours, given with copious draughts of water, is probably (at the present time) the best urinary antiseptic we can administer in this disease.—*Abstract Amer. Jour. of Obstet.*

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, H. J. HAMILTON, C. J. COPP,
F. A. CLARKSON AND BREFNEY O'REILLY.

Three Ureters diagnosed during life—Ureteral Catheterism, giving three different kinds of urine, one of which contains the Gonococcus.

Bransford Lewis describes the case of a woman, 24 years old, suffering from gonorrhoea, which had resisted all treatment. On cystoscopic examination, he was surprised to find on the left of the median line two ureteral mouths, while on the right there was but one, in the normal position. He easily introduced a catheter into each opening, reserving catheterism of the right ureter for another examination. He observed that the ureteral draining from the two openings on the left occupied unequal periods of time, that from the external ureter being thrice as frequent as that from the more internal one. The urine from the latter was almost normal, while the urine from the former contained several pus cells and numerous colonies of gonococci. The methylene blue test showed the absolute independence of these two ureters. The urine collected by catheterism from the right ureter was normal, and the function of the kidney on this side was more active than that of the left.

Three catheters, armed each with a wire, were introduced into the three ureters as far as the renal pelvis, making it possible to obtain a good radiograph. This showed that the two ureters on the left, after running parallel for a certain distance, crossed at the level of the iliac crest and then took an almost normal course up to the renal pelvis. One of the catheters stopped a few centimetres below the other. Repeated lavage of the infected renal pelvis with solutions of nitrate of silver soon cured the disease.

The conclusion reached in this case was that one had to do, not with two kidneys on the left side, separate and independent, but with a single kidney divided into two parts, each having its own pelvis and ureter. An analogous case has been described by Byron Robinson, who, after studying thirteen

cases of these congenital renal anomalies, has come to the decision that they present a certain regularity in their abnormality. —Translated from *Giornale Internazionale delle Scienze Mediche*, by HARLEY SMITH.

Pulmonary Tuberculosis and Heart Lesions.

Fazio, at the International Congress on Tuberculosis, held at Naples in 1894, contributed a paper on the relation existing between pulmonary tuberculosis and mitral lesions. Recently he has added a second paper on the same subject. For this latter he gathered statistics from a series of cases of both diseases, amounting to several hundreds. These were obtained from clinical observations extending over a period of ten years in the Hospital for the Incurables, and from other reports of cases in the Archives.

Fazio has been led, from his researches, to accept the teachings of Peter as to the antagonism between pulmonary tuberculosis and mitral lesions, especially in the form of stenosis. What are the causes of this antagonism?

1. Peter attributes it to the stasis in the lungs and to the resulting edema of the bases. Thence would follow functional hyperactivity of the apices, a condition unfavorable for the growth and development of the bacilli.

2. Meisenburg attributes it to the stasis and chemical changes in the blood, and especially to the lessening of its alkalinity, which prevents the development of the bacilli.

3. Lepine and Paliard, on the other hand, consider the edematous condition of the lungs as interfering with the bactericidal property of the blood-serum.

Fazio adds that there is another cause to be found in the reduction of the amount of oxygen in the lungs, as a consequence of the stasis and of the resulting reduction of the respiratory surface and of the exchange of gases.

One of these factors may be more important than the others, but, as far as our knowledge goes at present, we cannot exclude any of them.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED.
FENTON AND HELEN MACMURCHY.

Extra-Uterine Pregnancy.

Charles P. Noble has operated upon ninety-one cases of ectopic pregnancy in the last sixteen years. Of these eighty-nine were abdominal sections and four vaginal sections; two of these required subsequent abdominal sections. In this series one tube was involved as often as the other. In twenty cases the opposite tube showed evidences of inflammation. He believes the causes of ectopic pregnancy are mechanical, due either to infection of the tube or congenital defects or to mechanical distortions. Seven of the above cited cases are reported as unruptured, fourteen as ruptured, and seventy as tubal abortions. The danger of hemorrhage increases in the ratio that the point of rupture approaches the uterine end of the tube. The removal of the tube with or without the ovary by abdominal section is the operation indicated. When rupture has occurred immediate operation is demanded. A light anesthetic, rapidity in operation, the ligation and removal of the affected part and of the larger masses of blood clots manually, the removal of a portion of the free blood contained in the abdomen by irrigation with salt solution poured into the abdomen from a pitcher, the dilution of the remainder by leaving the abdomen filled with salt solution, and the rapid closure of the abdomen without drainage are the procedures which will give the patient the best chance. A correct and early diagnosis can usually be made if the history of the patient is carefully elicited; the diagnosis depends as much upon the history as upon the results of physical examination. If an early diagnosis is made, the patient can be operated upon while still in good condition, with the result of securing a high percentage of recoveries.—*Penn. Med. Jour.*

Methods of Dilating the Cervix Uteri at Term.

The question of artificial dilatation of the outlet of the pregnant uterus at or near the termination of gestation has occupied the attention of obstetricians within the last year or so to an uncommon extent. Bossi, with his metallic instrument, on the one hand, and Dührssen, with his vaginal Cesarian section, on the other, have stimulated an animated discussion

which has included all the methods of the so-called *accouchement forcé*. At the Boston meeting of the American Medical Association this year, at the Hot Springs meeting of the American Gynecological Society, and at the September meeting of the Chicago Gynecological Society, this subject was discussed in symposium. From the various views and conflicting practices of eminent authorities, some conservative generalities can be gathered to guide the practical obstetrician in his estimate of the indications and his choice of the most eligible methods.

The bloodless methods of dilatation of the cervix comprise three general varieties: by the hand; by the bag or balloon; by the metallic branching dilator. The story of manual dilatation is as old as the history of obstetrics, but the methods of Philander Harris and of Edgar are the best. The former consists of the introduction into the os of the index finger, then the thumb, separating these as in the act of snapping the finger, then introducing the other fingers in order and opposing them to the thumb. The tips of the fingers are hooked, and so the pull is downwards, in the physiological direction. Complete dilatation can be obtained by this means, but it is usually better, as soon as four fingers can be introduced, to employ the method of Edgar. The latter consists in passing the index and middle fingers of each hand with their backs opposing and pulling them downwards and apart. The manual methods possess the advantage of convenience, of safety, and of perfect control by the operator. They are fast enough for almost all cases. They are especially adapted for placenta previa, where quick delivery may be desirable. The dangers in all the methods of rapid dilatation of the cervix of the pregnant uterus lie in the haste which the operator desires. Conservatism requires that the danger from haste shall not be greater than the original condition which was the indication for the operation. The rule should never be as much haste as is possible, but as much haste as is safe. The danger to the mother from the complication calling for the interference is very rarely so great that the obstetrician is justified in running great risks in attempting to deliver her speedily, from the method of delivery itself.

Where haste is a less desideratum, where one safely has hours instead of minutes, the bag method is the best. The Barnes type is obsolete. The Braun type—that of the elastic rubber bag—possesses no advantages over the non-elastic balloon of the De Ribes type and has many disadvantages of

its own. The latter type consists of a conical non-elastic bag, which can be introduced within the uterine cavity. It then acts in three ways: as an artificial bag of waters, by means of the uterine pressure from above; as a stimulus to the post-cervical ganglia; as a moving wedge when traction is brought to bear upon it from below. It is the safest of all the methods, but is not adapted to those cases where great haste is imperative. Its best indication is in placenta previa. Here it prevents hemorrhage by means of pressure upon the uterine surface from which the placenta has been detached, and at the same time aids in dilatation. Bag dilatation is the most nearly physiological of all methods.

During the last few years the metallic dilator has been one of the most discussed instruments in the obstetrical armamentarium. For our purpose, only the branched dilators are to be considered. The instruments of Goodell and of Ellinger and the three-bladed écarteur of Tarnier have long had a limited use as dilators of the parturient cervix. Since the introduction of the De Ribes balloon, Tarnier's instrument has had a much more limited indication. It has, however, an advantage over the screw instruments, in that the force of the dilating is furnished by an elastic rubber band put around the handles. It pays for this advantage of relative safety in being slower.

Interest has been revived in the branching metallic dilators by the vogue which the instruments of the Bossi type have recently obtained in Germany and in this country. The essential principle is the spreading of from four to eight rigid blades under the action of a screw at or near the distal end. Much of the favor with which the instrument was received has been due to the enthusiastic approval which Leopold of Dresden has given to it. It was comparatively unknown outside of Italy until he took it up and brought it to the attention of German obstetricians. Since then, modifications of the Bossi principle have been invented by scores of imitators and improvers.

It cannot be denied that the Bossi instrument effects dilatation quickly, but it cannot be denied by the thoughtful that the quickness is gained at the expense of safety. On the authority of Hammerschlag, Schauta (Christofoletti), Bardeleben, and others, it appears that there is great danger of extensive lacerations of the cervix extending upwards into the lower uterine segment. Bardeleben showed, by his later examinations of women in his out-patient clinic, that the permanent results of the lacerations were worse in those upon whom the Bossi in-

strument had been used than upon those who had undergone spontaneous labors. The speed in accomplishing the delivery does not seem to be sufficiently superior to that from manual means to justify, except in the rarest instances, the greatly increased dangers of traumatism.

While Bossi was employing his instrument in Italy, Dührssen was advocating and practicing deep incisions of the cervix as a means of accouchement forcé. His idea was to eliminate the dilating stage of the labor and bring the patient at once into the second stage, so that the remainder of the labor could be hastened by forceps or other obstetric operation. Eclampsia was here, as in the Bossi procedure, the chief indication, although other reasons for hastening delivery also came into consideration. His principle differed from the older method of multiple incisions of the borders of the os, in that he advocated cutting deeply enough to eliminate entirely the cervix, making usually four incisions. The deep cervical incisions can only be undertaken after labor has been in progress at least long enough for the cervix to be well taken up and thinned. Dührssen recommended and practiced these incisions for cases where immediate delivery was indicated, especially cases of eclampsia. Since the incisions are adapted only for cases where the cervix is nearly obliterated and where labor has been in progress some time, Dührssen proposed what he calls "vaginal Cesarean section." This consists in separating the anterior uterine wall from the bladder, opening into the posterior cul-de-sac, and continuing the incisions in front and behind well into the lower uterine segment. By many it is considered unnecessary to make the posterior incision. By the operation one is enabled to deliver at once via the natural passages, by forceps, version, or other means. Afterwards the incisions are to be as carefully sutured as in abdominal Cesarean section. Actual priority in the performance of the operation probably does not lie with Dührssen, since others performed it before he actually did.

The older method of making multiple small shallow incisions in the margin of the os to hasten dilatation has practically been abandoned. None could tell beforehand how much further any of these cuts would tear as the fetus passed through, and there were frequent extensive tears into the uterine wall itself. Vaginal Cesarean section and the Dührssen incisions cut intentionally far enough to provide fully for the exit of the fetus, and therefore no more can be torn. Practically, these two

represent all the useful measures of bloody dilatation of the parturient cervix uteri.

The indications for cervical incisions are extremely limited, in the opinion of the vast weight of conservative authority. They would be limited to cases where quick delivery was considered imperative as a life-saving measure in the interest of the mother, such as uncompensated heart disease, eclampsia, internal concealed hemorrhage, etc., where manual dilatation failed. It is well, also, to remember that even in eclampsia it is rare to have the indication for immediate delivery so urgent that dangerous operative interference is permissible. There are other factors in eclampsia besides the presence of the fetus in the uterus.

Vaginal Cesarean section can be performed at any period in the labor, or even in the pregnancy, whether the pains have begun or not; whether the cervix has been obliterated or not. It is, no doubt, a fascinating operation to do, and satisfying as a piece of obstetrical gymnastics. A growing number of conservative obstetricians, however, cannot see wherein it is better than the classical Cesarean section. Under modern conditions the mortality from the latter has been reduced to a minimum, and it is really not a difficult operation to one skilled in abdominal work. It is surely much easier to close the uterine incision from the abdomen than to work high up in the dark vagina, placing sutures. Again, if it should be deemed necessary, for any reason, to remove the whole uterus after emptying it, that operation is easier and safer by way of the abdomen than by way of the vagina. The hemorrhage, which is one of the chief dangers in all Cesarean sections, can be much more easily controlled from above than from below.

The multiplication of instruments for bloodless dilatation of the cervix in late pregnancy and labor and the perfection of operative technique of a bloody character must not lead the obstetrician from a wise conservatism. The rules in obstetrics still remain: Do nothing without indications; do no more than the indications warrant; do not in the least particular sacrifice safety for speedy delivery, however imperative that seems.—HENRY F. LEWIS, in *Surgery, Gynecology and Obstetrics*.

Editorials.

McGILL UNIVERSITY'S MISFORTUNES.

Two disastrous fires visited McGill University within a fortnight in the month of April. We are especially interested in the appalling calamity which befell the Medical Faculty, April 16th, when its fine medical building and the greater part of its valuable contents were destroyed by fire. The money loss was about six or seven hundred thousand dollars, but the insurance amounts to about \$350,000. The net loss to McGill is therefore something over \$250,000. Fortunately this will cause only a temporary inconvenience. McGill's friends are strong, wealthy and generous. A Toronto daily paper thus speaks of this aspect of the misfortune:

"McGill University will not be crippled by the pecuniary loss at which the consequences of its two visitations by fire may be appraised. After all deductions for insurance are made, the net amount of that loss will be found to be a large sum, but if it were ten times as large it would doubtless soon be made good. Wealthy friends of the institution, who in the past have given munificent proofs of their pride in it and their affection for it, will be ready to put their hands in their pockets again."

Apart from money matters, however, McGill's loss is great, and, in some respects, irreparable. The Medical Faculty took special pride in their five museums and their library. Before Osler's time there was a large collection of pathological specimens. Osler made many additions during his professorship. Adami, the Professor of Pathology, and the "Director of the Pathological Museum" and his assistants have in recent years added much to the collection, and have done a vast amount of work in arranging and classifying the specimens. Shepherd took great pride in his magnificent collection in the anatomical museum. For a good portion of the last thirty years he was the main worker in that museum. Chalmers, Cameron and

Gardner took a very deep interest in their obstetrical and gynecological museum, which was the best thing of the sort in Canada and one of the best in the world. We are told that the two remaining museums—one for pharmacy and another for hygiene—were exceedingly well furnished and equipped.

The library was one of the best contained in any medical college in the world. At the time of the fire there were about 24,000 volumes in what was called the fireproof stockroom. We are glad to learn that a large proportion of these books have been saved, although a certain portion of them have been destroyed or injured by water and heat. In all the departments many of the things lost were beyond price and can never be restored. The sadness of the disaster is indescribable. While we mourn to-day with McGill over what she has lost, we congratulate her on the magnificent position she holds among the great medical schools of the world. Fortunately she never was stronger than in this her day of dire distress.

THE ONTARIO MEDICAL ASSOCIATION.

The twenty-seventh annual meeting of the Ontario Medical Association will be held in the Medical Buildings, Queen's Park, on the 28th, 29th and 30th of May next. There are in the association approximately 800 enrolled members. We believe the organization can be made a much more potent agency for good in the province than it is at the present time both for the profession and for the public.

The meeting will be distinguished by the presence of Dr. Mazyck P. Ravenel, so long associated with the Phipps Institute of Philadelphia, and Dr. Geo. W. Crile, of Cleveland, one of the eminent surgeons of the United States. The committee have also invited two gentlemen who will attend the meeting of the American Medical Association, namely, Dr. William Milligan, of Manchester, the otologist, and Professor Gustave Killian, of Freiburg, Germany.

In view of the fact that a wide and concerted movement is

under way to enroll the members of the profession in the Dominion as a strong organization with affiliations extending to every provincial, county and city society, it is of special moment that physicians become members of the association this year, and thus participate in creating what must result in a new status for Canadian medicine.

The meeting will consist of sessions, in the mornings devoted to sectional work, and, as will be seen, the programme is under way, the sections of Medicine and Surgery being well filled in. Other sections will be formed as the necessary papers are secured. The afternoons will be given up to papers of general interest and the addresses in Medicine and Surgery; the evenings to entertainment alone. On the first evening there will be a smoking concert, to which all members are invited, and on the second a dinner at one of the large hotels. Tickets for the dinner can be secured at the time of registration, \$2 each. Any member not coming to the city until the second day of the meeting must let the Secretary of the Committee, Dr. S. Johnston, 169 Carlton Street, know not later than noon, May 28th, if he intends to be present at the dinner.

The Committee are securing the regular convention rates upon the lines of the Eastern Canadian Passenger Association from points east of and including Port Arthur. Ask your railway agent for a Standard Certificate as a member of the Ontario Medical Association, and buy a full single first class fare ticket to Toronto. On arrival, hand the certificate to the Secretary.

PROVISIONAL PROGRAMME.

The final order of papers will be announced in the daily press.

Tuesday, May 28.—Morning Session—Medical Section. 1. *Leucocytosis*, D. A. Graham, Toronto General Hospital. 2. *Paper, a Résumé of the Development of Clinical Psychology*, J. G. Fitzgerald, Toronto Asylum. 3. *Perforation of the Gall Bladder in Typhoid Fever*, E. Brandon, North Bay. 4. *Feeding of Typhoid Patients*, J. A. Oille, Byng Inlet, and George E. Smith, Toronto. 5. *The Care of the Degenerate, with Suggestions as to the Prevention of the Propagation of the Species*, R. W. Bruce Smith, Toronto. Surgical Section—*Clinic at the*

Hospital for Sick Children. Cases will be presented by surgeons on the staff.

Tuesday Afternoon.—General Session. *Symposium—The Profession in Relation to the Public.* 1. *The Medico-Legal Aspects*, G. Silverthorne, Toronto. Discussion to be led by Hugh McCallum, London, and two others, names to be announced later. 2. *The Public Health Aspects*, J. W. S. McCullough, Alliston. Discussion to be led by C. A. Hodgetts, Toronto; R. Raikes, Midland, and W. R. Hall, Chatham. 3. *Ideals for Asylum Work in Ontario*, C. K. Clarke, Toronto. Discussion to be led by N. H. Beemer, Mimico; J. Russell, Hamilton; T. J. W. Burgess, Montreal, and W. N. Barnhart, New York. 4. *The Infection of Drinking Water*, J. A. Amyot, Toronto. Discussion to be led by T. A. Starkey, Montreal, and W. T. Connell, Kingston. Evening Session—To be devoted to entertainment. A smoking concert will be given in St. George's Hall, to which all members are invited.

Wednesday, May 29.—Morning Session—Medical Section—1. *Pathology, Etiology and Treatment of Neurasthenia*, S. H. McCoy, St. Catharines. 2. *Modern Methods of Anesthesia*, S. Johnston, Toronto. 3. *Allopathic Doses of Drugs*, T. O. T. Smellie, Fort William. 4. *Desirability of Establishing an Institution to which Inebriates may be Committed by Legal Process*, Edward Ryan, Kingston. Discussion to be led by W. C. Barber, Kingston, and A. T. Hobbs, Guelph. Surgical Section—1. *Symposium on the Treatment of Fractures*: (a) *Fractures of the Skull*, D. E. Mundell, Kingston; (b) *Fractures Near the Elbow*; (c) *Fractures Near the Wrist and Ankle*, A. W. Stinson, Brighton; (d) *Fractures of the Femur*, W. E. Gallie, Toronto. 2. *Report of a Case of Tetanus, with Cure by Amputation After Three Months' Treatment*, T. W. H. Young, Peterborough. 3. *Paper*, title to be sent, A. E. McColl, Belleville. 4. *Closure of the Incision in Abdominal Section*, N. A. Powell, Toronto.

Wednesday Afternoon.—General Session—1. *Presidential Address: The Operative Treatment of Goitre*, a second report, G. A. Bingham, Toronto. 2. *Address in Surgery: Clinical and Experimental Observations on the Direct Transfusion of Blood*,

Geo. W. Crile, Cleveland. Evening Session—Annual dinner. the particulars of which will be announced later.

Thursday, May 30.—Morning Session—Medical Section—1. *Alcohol and Life Insurance*, T. F. McMahon, Toronto. 2. *Serous Hemorrhages*, G. W. Ross, London, England. 3. *X-ray in Medical Diagnosis*, S. Cummings, Hamilton. 4. *Early Manifestations of Acute Mental Disease*, J. Campbell Meyers, Deer Park. 5. *Necessity for Separate Isolation Hospitals for Diphtheria, Scarlet Fever, and Minor Infectious Diseases*. Discussion to be led by Walter F. Langrill, Hamilton General Hospital, and J. N. E. Brown, Toronto General Hospital. Surgical Section—1. *The Bier Treatment*, S. H. Westman, Toronto. 2. *Intestinal Obstruction*, Ingersoll Olmsted, Hamilton. 3. *Mastoiditis, with its Complications*, Gilbert Royce, Ottawa. 4. *Paper* (title later), A. Primrose, Toronto. 5. *Diagnosis of Malignant Tumors: (a) Clinical Aspect*, William Hackney, Ottawa; (b) *Pathological Aspect*, E. Stanley Ryerson, Toronto.

Thursday Afternoon.—General Session—1. *Address in Medicine: Methods of Infection in Pulmonary Tuberculosis*, Mazyck P. Ravenel, Philadelphia. 2. *Immune Therapy in Tuberculosis*, A. J. Richer, St. Agathe, Quebec. Discussion to be led by J. H. Elliott, Gravenhurst, and R. J. Dwyer, Toronto.

THE PSYCHIATRIC CLINIC IN TORONTO.

Thanks to the praiseworthy efforts of a small number of men—one perhaps should receive a major share of commendation—the probability of there being erected a Psychiatric Clinic on the grounds of the new Toronto General Hospital seems almost assured.

The exact significance of this step is, in all probability, not apparent even to many men in the profession, who otherwise are thoroughly *en rapport* with the situation in Psychiatry in Ontario.

That it is a decided step forward, all recognize; but some perhaps are inclined to view the progressive step with certain

forebodings. It is to these that the writer would say a word. The clinic will be primarily for acute cases, where the condition of each individual may be most thoroughly gone into, and the latest approved methods of therapy adopted, in the anticipation that many patients so dealt with will be saved from chronicity. This, however, is only one phase of the question. The educational value of such an institution will be inestimable. Here the training will be given to the medical student, and the assistants in the various Provincial Insane Hospitals, because it must be kept in mind that only a portion of the work can be done by those in the clinic. The medical staffs of the other institutions for the insane will be called upon very largely to aid, and in many cases to complete the records of patients, first admitted to the clinic, and later transferred.

So it is at once evident that the other hospitals are to be far more than mere chronic institutions—without their active, sympathetic and hearty co-operation the Psychiatric Clinic will accomplish nothing.

There is one other point that the general practitioner in Ontario should take to heart, ponder over, dream over, and finally arm himself and take action against, namely: the appointment of medical officers in hospitals for the insane who have absolutely no experience in such matters; no training, special or otherwise; yet are willing in one or two years to blossom out as full fledged professors of Psychiatry, and express opinions as to the care and treatment of persons suffering from some psychosis. Only with the correction of this evil will the situation in Ontario improve. Competent medical inspection of all patients admitted and civil service reform in the matter of advancement of assistants will aid in the solving of this difficult problem; but until it is solved, until the control of staffs is taken out of the hands of petty, interfering officials, nothing will be accomplished, and any superstructure that is erected will be on a shifting, treacherous and uncertain foundation—the sands of political favor and reward.

PLAIN JUSTICE.

The trial for murder, recently, of a man in a neighboring community has again emphasized certain features of the question of responsibility which perennially is brought to the fore by the lay press, dealt with as a rule in a most incompetent fashion by the law, and in many instances, unfortunately, in a truly unscientific manner by the representatives of the medical profession who are called to give "expert testimony."

Now the sordid details, which well serve as a text, need not be mentioned. The newspapers have, it would seem, almost satiated the gluttonous appetite of the sensation seeker on this occasion, if the "graphorrhœa" of those reporting the proceedings may be taken as a fair index.

Scientific medicine is interested in cases of this sort just this far: where does responsibility end and where does irresponsibility begin? It is quite beyond the scope of this comment to discuss or reopen all the phases of responsibility in mental alienation. This topic, probably the most vexed one in Medical Jurisprudence, is unhappily in a chaotic state. Here, however, we have the curious spectacle of the law first endeavoring to prove an individual insane, and then, when a commission composed of three members (two of whom were not even medical men) decide he is not insane, making a strenuous endeavor to have him declared guilty and pay the death penalty. The points at issue in the case were clearly these: a man is either sane and responsible, or insane and irresponsible, and the judge, the jury, the non-medical commission, the prosecution, the defence, the retained alienist are not the persons, who should be called upon to decide the question—but a limited number of unbiased experts, appointed, not retained, who should have the case under scientific observation for a sufficiently long period to give an opinion whose value no one could dispute.

It is to be regretted that a prosecuting attorney should in some cases wish only to register a conviction, and that a judge should often be so weighed down by his legal training that he is not open to the arguments of exact science. It is also

unfortunate that the large body of laymen, and a considerable number of the medical profession are deeply imbued with the idea that the plea of insanity is only an artifice employed by unscrupulous counsel to avoid having the prisoner pay the penalty.

What is the solution? The appointment of a board of alienists, men whose training and daily work among the insane, fit them to express sound scientific opinions, unobscured by the cloud of passion for retributive justice, free from the mercenary views of the retained expert, guided only by the weight of positive or negative evidence obtained after a thorough and exhaustive study of the case.

The establishment of detention wards in Psychiatric Clinics, where alienist and jurist might meet on a more common ground, come into closer association, more thoroughly analyze the views held by one another, and mutually aid in the advancement of plain justice, seems to be a method of which it could at least be said that it had no more in view than the solution, in a calm, deliberate and scientific fashion, of a most perplexing problem.

THE NEW HOSPITAL.

The gentlemen chosen by the Board of Trustees of the General Hospital to visit the principal hospitals of the United States, with a view to acquiring ideas which might come in useful in the erection of the new institution here, returned March 20th.

During their trip they inspected five hospitals in New York City—St. Luke's, Roosevelt, Bellevue, Mount Sinai, and the New York—one in Philadelphia—the Jefferson Medical College Hospital—and one in Baltimore—the Johns Hopkins.

Dr. J. N. E. Brown, Superintendent of the Toronto General Hospital, spoke as follows to a reporter of the *Toronto Mail and Empire*:

St. Luke's Hospital was about the most handsomely appointed of all they had seen. Its charges run from \$3.50 per day to \$12, and for special nursing there is an extra charge of

\$3.50 for each 12 hours, which would bring the cost of the most expensive rooms up to \$19 a day. In addition, however, expensive and uncommon medicines must be paid for, and the grand total might easily run up to \$22 or \$23 a day.

The party went through one part of the new Bellevue Hospital, which is to cost \$10,000,000, and which is now nearing completion. In the present Bellevue Hospital there were 930 patients, suffering from all kinds of diseases, including contagious diseases and tuberculosis. So long as such patients were carefully isolated, Dr. Brown did not think it reasonable to exclude them from the institution. Insane patients are kept under observation for five days, which Dr. Brown thought a good feature, as it spared people suffering from delirium the ignominy of being taken to an asylum.

The method of isolation followed in the Jefferson Medical College Hospital in Philadelphia was the best they saw. On the ground floor, separated by a driveway perhaps twenty feet in width, there were isolation wards, where nurses and attendants had everything at hand with which to carry on the work of a self-contained hospital. If a patient is brought to the hospital suffering from what is supposed to be a contagious disease he is placed under observation in these wards. On the top floor there are also other isolation wards, with a suite of dependencies similar to those below, where patients are taken who may contract a contagious disease while in the hospital proper.

"In the New York Hospital," the Doctor continued, "the operating theatre alone cost \$10,000. The ceiling and the floor and the walls were of slab marble. Dr. Osler's advice to us, when conferring with the Board some time ago, was to go around and see the mistakes the other fellows had made, so that we might not ourselves make them. Some of the hospitals have too much elaboration. Too much money has been spent in the operating theatres to render them antiseptic. In most instances there was tiling on the floor and glass tiling on the walls. In St. Luke's a sort of cement, known as arbestulorde, has been utilized. It has been in use three or four years, and has proven satisfactory. The best flooring we saw was the old-fashioned tile, which had been in use for thirty years, and was still good.

At the Mount Sinai and Johns Hopkins Hospitals there was cork carpeting used in the corridors and down the centre of the wards. This is useful in that it saves the feet of the nurses, which, otherwise, on the hardwood floors, are apt to give out. In the Jefferson Hospital the window jambs and frames were of magnacite, the bannisters and door frames of metal, and the windows of glass wire, non-breakable and non-inflamable—all these used with the idea of rendering the building fireproof.

“The Roosevelt Hospital impressed us greatly, owing to the arrangement of the kitchen and laundry. They were on the ground floor, with the roof in a court behind the main building, so that none of the odors found their way into the wards. The majority of the doctors we consulted were in favor of having the kitchen and laundry in the basement, and not on the top of the building, as is often the case. They took this stand for economical reasons. Following this plan, there is no necessity of lugging all the provisions to the top of the building, only to bring them down again when serving to the patients. Much labor is also spared in disposing of the garbage.”

In respect of ventilation, the artificial means are not generally approved. Ventilation from the windows has been found most satisfactory, so long as care is taken to protect the patients from drafts.

DOCTORS AND MOTOR CARS.

Motoring for March publishes an illustrated article under this caption, giving the experience of some well-known practitioners who are operating motor cars.

One medical gentleman, who is stated to have the situation thoroughly “at his fingers’ ends,” alleges that one motor does the work to the better satisfaction of his patients than two horses! His first machine—electric—was not satisfactory, so the firm that sold it to him proceeded to “do” him again, and quite succeeded. Expensive experience this, but alas! how common to us all as a class! The doctor intimates that with his present motor delays are sometimes due to “inferior design

and construction." The half-tone picture of the doctor and his car is very true to life, and incidentally it illustrates his noted caution in having at hand a sturdy pair of draught horses to take care of the machine should any delay occur "through inferior design or construction," and a bicycle, upon which he himself might make a rapid retreat from the ignominious scene of a possible breakdown. His gasoline machine has evidently done him excellent service, and we are forced to the conclusion that he is somewhat unfair in his criticism of it as compared to that of his electrics, which have been only damned by faint praise. Can it be possible that his true opinion of his two first acquisitions is not fit for publication? Anyhow, "out of sight, out of mind," and Dame Rumor has it that the Commodore's yacht is moored to his first venture in the world of motoring! The neglect to submit the proof-sheet to the subject of this interview was a cruelty, but it is irresistible to give his final sentence verbatim: "Now that we have cars upon which we can depend there is no doubt that a motor car is one of the greatest BOOMS to the active physician."

One machine and its owner is pictured in this article as stuck halfway over a bridge. There is no text descriptive of this scene, but we conclude that after having cranked in vain in the broiling sun, this "specialist with the family car" is so exhausted that nothing can be said; or rather, nothing can be said that he has not already said!

Yet another illustration shows a fashionable practitioner of "Euclid Avenue" proudly taken in his new surroundings. His Bloor Street neighbors will vouch for the correctness of the background and also for the characteristic pose. The uninitiated might mistake the pose for that of paralysis agitans, but it is really the "cranking up posture," and is assumed by this gentleman during that part of every morning which is not occupied in doing "30 mile trips."

Finally another gentleman tells the representative of the *Motor Journal* that he has owned an electric runabout for one year. He uses it only for night calls and wet weather, and his odometer shows a total of "31,000 miles"! For the entire

space of one year this doctor must have slept in his auto and never has had a chance "to come in out of the wet." The benighted fraternity might well look upon this achievement in wonderment, for it represents approximately a nightly or "wet daily" non-stop run of 100 miles throughout the year. We wonder what was passing in the mind of the representative of *Motoring* as he listened to this wonderful narrative! He may have had reason for suppressing any illustration in connection with the experience, but we venture to think that the possessor of such a machine and such a record has every claim to the distinction of having "his picture in the paper."

REPORT OF COMMITTEE OF THE LEGISLATURE OF ONTARIO ON CHILD LABOR.

In our last issue we referred to the work which was then engaging the attention of the above committee. Their report has since been published. It sets forth: 1st, the objects aimed at; 2nd, existing defects; 3rd, remedies.

The objects are to safeguard the health and condition, physical, mental and moral, of the children of the present generation, and establish good material for the men and women of the next.

Notwithstanding the laws and agencies at present existing, and the commendable exertions of the Inspectors of the Labor Department, conditions exist now which will tend to become worse with the growth of industrial activities if increased precautions be not taken and strict vigilance maintained. Work and wear, worse than those of the schoolroom, and continuing on during the time when the young organism should be engaged in recreative repair, are interfering with bodily health, whilst the lack of school life is adding to the deterioration of mind and soul. The admixture of foreigners is said to be increasing these tendencies.

The report recommends more careful and competent insistence on the provisions of the Truancy Act; maintenance of the age limit and making it in some instances higher; stricter

enforcement of the registration of births (so as eventually to have better evidence of age), and the appointment of an officer to examine into these and other proofs of fitness; greater watchfulness and search to avoid vagrancy, through the action of Children's Aid Societies and other officers; an educational test; revision of the hours of labor and of the character of certain occupations in regard to danger to health or danger of accident. A certificate of physical fitness of young people before entering them upon certain occupations is alluded to on page 8; but we would suggest that this should be given by a medical practitioner, in connection with the Medical Health Department or otherwise. True, the health departments are referred to on page 6. "State relief" is also suggested in cases "of families who are in absolute need of the earnings of children below the legal age for industrial life." This has been tried in New York, Chicago, Boston, Pittsburgh and other places, and is said not to have been abused.

Attention is drawn to the desirability of bringing under proper regulations "newsboys, messenger boys and the like," "acrobats, tumblers," young people employed in hotels, concert halls and other places of amusement, not now under the purview of any of the acts. The evil effects of attendance of the young at theatres, variety-shows and dance halls, as well as "the reading of dime novels, smoking cigarettes," etc., with their "late hours, nervous excitement and moral deterioration," are also spoken of.

Whilst objecting to the engagement of the immature in unsuitable employments, the report deprecates, on the other hand, "idleness between fourteen and sixteen," caused "amongst some boys by their disposition to leave school at too early an age," and a suggestion is made running parallel to the manual and technical training now being introduced.

Recommendations are made for harmonizing the provisions as to age, etc., of the Shops Act and the Factory Act, and for obtaining uniformity in the several Provinces: "firms, to escape the Ontario law, have moved, or threatened to move, across the provincial boundary."

We are told that the law allows children of fourteen to work 60 hours per week, "and sometimes with overtime;" from 7 in the morning to 6 at night, with an hour for dinner, is a long day of continuous work for a man, let alone a child; in some cases women and children work 11 hours per diem—6.30 a.m. to 6.30 p.m.—for five days, so as to get the Saturday half-holiday. This means rising at 5.30, and finishing the evening meal at 7.30 or thereabout. What time is left for anything beyond the actual needs of animal existence can be easily calculated. In piece-work and home-work, additional evils exist.

It must be quite evident that there is ample need for the work of this Committee and the assistance of all of our readers who would like to help on the humane objects in view. Any such are recommended to obtain from the Department a copy of the Report, a brochure of a dozen pages of interesting and useful reading.

W. O.

NOTES.

Canadian Medical Association.

The fortieth annual meeting of the Canadian Medical Association will be held at Montreal, September 11th, 12th and 13th, 1907, under the presidency of Dr. Alexander McPhedran, of Toronto. Those who are willing to contribute papers will communicate, as soon as possible, with the General Secretary, Dr. George Elliott, 203, Beverley Street, Toronto.

The Presidency of the University of Toronto.

On another page we made reference to the wishes of many graduates that Professor Maurice Hutton should be appointed President, but since that paragraph went to press we learn that Robert A. Falconer, M.A., B.D., LL.D., President of Pine Hill College, Halifax, has been unanimously elected by the Board of Governors for the Presidency. Dr. Falconer is a Canadian, born in Prince Edward Island forty years ago. He was educated at Queen's Royal College, Trinidad. While there he passed the Cambridge local examination with first-

class honors, in some subjects being bracketed equal with the first in the entire list. He also passed the London matriculation, receiving the Gilchrist scholarship, equivalent to £100 for three years, and at the same time he held the colonial scholarship of £150 for the same period.

~ Later he studied at the University of Edinburgh, passing for his degree of Master of Arts with honors in classics. He subsequently obtained from that university the degrees of B.D. and D.Litt. He also won a B.A. from London University, with honors in classics and philosophy. Three sessions were also spent in study at the German Universities of Leipzig, Berlin and Marburg.

Dr. Falconer has received the honorary degree of LL.D. from the University of Fredericton and from St. Francois Xavier University.

After completing his studies in Britain and Germany, he returned to Nova Scotia, and in 1892 was appointed lecturer in Greek exegetics in the Presbyterian College Halifax, and in 1895 was appointed Professor.

Personals.

Professor Wm. Osler expected to sail from Liverpool for America, April 20th.

Dr. George McDonagh returned to Toronto after his visit to Egypt, and resumed practice, April 18th.

Drs. Herbert Bruce and Stanley Ryerson, of Toronto, left April 15th to visit Chicago and Rochester, Minnesota.

Dr. J. H. Elliott, for several years in charge of the Muskoka Cottage Sanatorium, Gravenhurst, has resigned, and removed to Toronto.

Dr. G. W. Ross has returned from England, and is now in charge of the Inoculation Department of the Toronto General Hospital.

Dr. Oscar Klotz, formerly of Ottawa, has been in Montreal for some time, and holds a position on the staff of McGill University.

Dr. Kennedy McLlwraith, of Toronto, visited Johns Hopkins Hospital, Baltimore, in the latter part of March, and remained about ten days.

Major F. L. Vaux, formerly of Ottawa, and now stationed at Stanley Barracks, expects to go to Aldershot about the first week of May, to remain in England about one year. He intends to go through a systematic course of study in bacteriology and hygiene.

Dr. Oliver R. Avison, formerly a practitioner of Toronto, and for the last fifteen years a medical missionary in Seoul, Korea, has received the King's license and authority that he may accept and wear the Insignia of the Fourth Class of the Order of the Tai-Keuk conferred upon him by the Emperor of Korea in recognition of valuable services rendered by him.

At a reunion of the class of 1887 of the University of Toronto the question of the presidency of the University was informally discussed. It turned out that all the graduates present were enthusiastically in favor of Professor Maurice Hutton as President. There appears to be a general consensus of opinion among the graduates and many other friends of the University in Toronto that as acting-President Dr. Hutton has been a pronounced success. We have long appreciated his scholarly attainments, but we are now commencing to think that he possesses executive and business ability of a very high order.

Marriages.

Joseph Jordan, M.B. (Tor., '00), of Meaford, to Miss Frances Scott, of Toronto, March 25th, 1907.

Christopher Howson, M.D., C.M., of Stettler, Alberta, to Miss Ada Vance, of Cavan, April 3rd, 1907.

R. S. Brewster, M.B. (Tor. '03), of Beeton, to Miss Mina Chantler, of Newton Robinson, March 20th, 1907.

Obituary.

DR. McQUEEN.

Dr. McQueen, a physician whose home was in Edinburgh, aged about 35, was killed on the C. P. Railway near Gower, a village east of Winnipeg, on the evening of April 6th. It is supposed that he fell off the platform of one of the express cars. He had no friends in Winnipeg, and the physicians of that city took charge of the remains.

ORONHYATEKHA, M.B.

Dr. Oronhyatekha, who graduated, M.B., from the University of Toronto in 1866, died at Savannah, Ga., March 3rd, 1907. He was for many years Supreme Ranger of the Independent Order of Foresters.

W. H. DRUMMOND, M.D., LL.D.

Dr. W. H. Drummond, the well-known physician and author of Montreal, died at Cobalt, North Ontario, April 6th, aged 53. He had a stroke of apoplexy, causing paralysis of the right side, and unconsciousness, April 1st, and never rallied in any way. He was born in Ireland, and came to Canada when ten years old. He received his medical education in Bishop's College, and the degree of LL.D. from the University of Toronto. Although a resident of Montreal for the greater part of his life, he was well known through the whole of Canada and a portion

of the United States. He was highly respected by the public and much beloved by his many friends in Toronto. We have taken the following elegy from the *Toronto Mail and Empire* of April 13th.

ELEGY FOR "THE DOCTOR."

Landlord, take a double fee, and let the banquet slide,
Send the viands, send the wine to cheer the poor outside,
Turn the glasses upside down, leave the room alight,
Let the flower-strown tables stand glittering all the night.

Everybody's friend is gone, hushed his gentle mirth,
Sweeter-hearted comrade soui none shall know on earth,
Bury body, manly mind, upright lifted head,
Viking eyes and smiling lips—Doctor Drummond's dead.

For the Club, for the feast, and for the busy street,
Primal natural airs he brought, oh, so fresh and sweet,
Prattling rivers, gleaming lakes, wild-flower forest floors,
To heal the city's weary heart with balms of out-of-doors.

But where the campfire-litten boughs swing swaying overhead,
And wondering wolf and lynx shrill wild the boding of their
dread,
And strangely through the moony night the hooting owlets roam,
His tones would yearn in gladsome talk about the doors of Home.

In sympathy with every pain of all who bear the yoke,
There was a natural piety in all he wrote and spoke,
He warmed with Irish pride in deeds defying Might's strong
host,
Yet ever shared the Saxon sense for ruling at the roast.

He bore the poet's shifting heart that puts itself in place,
Of every humble kindly soul it knows of every race,
He felt their sorrow as their joy, but chose the strain to cheer
And help the differing breeds to share one patriot feeling here.

There was no better loyalist than this whose humors played,
In pleasant human wise to serve the State two races made;
Oh, Lardlord, turn the glasses down, and leave the room alight,
And let the flower-sweet silence tell his shade our grief to-night.

Ottawa, April 9th.

E. W. THOMSON.

Book Reviews.

PROGRESSIVE MEDICINE.—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., assisted by H. R. M. Landis, M.D. March 1, 1907. Philadelphia and New York: Lea Brothers & Company. \$6.00 per annum.

The first volume of another year of this successful journal contains articles on the surgery of the head, neck and thorax, by Chas. H. Frazier; infectious diseases, by R. B. Preble; diseases of children, by Floyd M. Crandall; rhinology and laryngology, by D. B. Kyle; and otology, by B. Alex. Randall. *Progressive Medicine* is such a welcome visitor and is so well known, as to need few words of comment. All the articles in this number give a concise account of the progress of the world during the last twelve months. With this excellent quarterly beside him, a physician can never get behind the times.

TEXT-BOOK OF PSYCHIATRY. A Psychological Study of Insanity for Practitioners and Students. By. Dr. E. Mendel, A. O. Professor in the University of Berlin. Authorized Translation. Edited and enlarged by William C. Krauss, M.D., Buffalo, N.Y., President Board of Managers, Buffalo State Hospital for Insane; Medical Superintendent, Providence Retreat for Insane; Neurologist to Buffalo General, Erie County, German, Emergency Hospitals, etc.; Member of the American Neurological Association. 311 pages. Crown octavo. Extra cloth. \$2.00, net. Philadelphia, Pa.: F. A. Davis Company, Publishers, 1914-16 Cherry Street.

This book is standard in Germany, and there is no reason why it should not achieve the same pre-eminence in America. The article on the stigmata of degeneration is especially complete, and is perhaps not equalled in the English language. The treatment of each subject is full enough to satisfy post-graduate students and even specialists. To a very great extent Dr. Krauss has avoided the labored sentences which usually make translation from the German so tedious.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS. With Especial Reference to the Clinical Application of Drugs. By John V. Shoemaker, M.D., J.L.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital; Member of the American Medical Association and the British Medical Association; Fellow of the Medical Society of London, etc., etc. Sixth edition. Thoroughly revised. (In Conformity with Latest Revised U. S. Pharmacopeia, 1905.) Royal octavo, 1244 pages. Extra cloth, price, \$5.00 net. Full sheep, price, \$6.00 net. Philadelphia: F. A. Davis Company, Publishers, 1914-16 Cherry Street.

It is with great pleasure we receive this volume, which has been revised to date with all the changes of the U. S. P. and B. P. Great changes have been made in the strength of official preparations, the nomenclature of many and the standardizing of many more. The changes that have been made by the addition of X-rays, chapters on actinotherapy, animal extracts, etc., all add greatly to the value of the book. Therapeutics, the basis of all rational and scientific treatment, has not had its proper share of attention by the great teaching bodies, and the graduate in medicine is more deficient in his therapeutics than probably any other subject. This volume supplies such a fund of knowledge, couched in freedom of language that makes its reading enjoyable, that it should be on the desk of all practitioners for frequent and ready reference. We can conscientiously recommend it.

THE PRACTITIONERS' VISITING LIST FOR 1907. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil and rubber, and calendar for two years. Price by mail, postpaid, to any address, \$1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea Brothers & Co., Publishers, Philadelphia and New York, 1906.

Selections.

Oculists and Fakirs.

At present we oculists are most busy and earnest, and effectively so, in creating and commissioning "fake" ophthalmic and refraction schools, refracting opticians, peripatetic spectacle peddlers, and quack M.D. oculists. These things are the direct result of our neglect. No blame, of course, to them who make their chief corner-stone the block we have rejected. There are eighty or ninety good reasons why headaches may not be relieved by our prism glasses. At present osteopathy is influencing legislatures, and ignorantly, but far more successfully than many of the profession, it is treating the millions of distorted or weakened and diseased backs and bodies of our people; we neglect the study of the spinal column utterly and wholly in the functional and beginning stages of lateral curvature. Osteopathy is a product of our professional neglect and bigotry, and especially of the ophthalmic variety.

Great surgeons and orthopedists say, if a child does come into their hands with lateral curvature, "O, let it go; give it some exercises! it will get well as it grows older." But spontaneous cure never comes. If they pretend to treat it at all, they give it over to a nurse to handle. In truth they do not treat it until they can treat it surgically; and there was never a case of organic lateral curvature cured, either surgically, or by all the horrible torture chamber machines a Hoffa could devise or picture. Not a man knows the cause of this defect, and how, therefore, can there be a cure? The superintendent of schools of New York City orders his hundreds of thousands to carry their books on one side one-half the time, and on the other side the other half. In this same city great classes of poor children are formed in lines and taught to bend their bodies at command to one side, and then to the other. Better would it be to hold a black cat over the crossroads at midnight and mumble a charm. Osteopathy is a wretched thing, but it often cures, and, however blindly and stupidly, it is making some sort of use of deep massage, the stone which the medical architects refused.

Eddyism is rampant in the land, and professionally we are largely responsible for Mrs. Eddy, her foolish children, and her million dollar temples. As medical men we have wholly neglected the attitude of mind of the patient to himself, and to his disease. Especially to her disease! We have been so absorbed in our so-called "science," our professional dignity, our personal reputation and success, that we have forgotten the first duty of any human being: the duty to be kind, and to

take a personal interest in each other as individuals, especially if they are our patients. The second duty, also, too frequently we have forgotten: to be sincere, to believe in ourselves and our therapeutics. With all the follies of faith cure and of unchristian unscience, the Eddyistic sillies did not forget those two fundamental duties.

Again, the quacks have made use of our refused quarryings as corner-stones of their healing temples. It is ridiculous bigotry to make fun of the quacks we ourselves allow or create. These quakeries are not made up entirely of errors, follies, greeds, and stupidities. And our medical practices, "scientific" and "ethical" as we fondly imagine them to be, are not without elements and alloys of quackery, folly, and greed.

The more conservative, the more "scientific," the more self-satisfied, the greater, usually, is the alloy of error and quackery. Especially in the cities; especially among the leaders, the professors, the text-book makers; especially among the specialists. The hope of progressive and helpful medicine lies in the general and country practitioners, the modest unknowns of the cities, the protestants and extremists. Anything, even earthquakes, are needed to shatter the complacency of the success hunters and of the success getters.

Every text-book, and almost every monograph and medical journal article will be revolutionized when your oculists agree; your oculists will not agree until you as general practitioners secure the establishment of at least one serious refraction school, with a two-year, or a three-year obligatory course of post-graduate study. And this, as general physicians, is your concern. You will be compelled at last to force us to do our long-neglected duty.—GEO. M. GOULD, before Med. Assoc.

Normal Salt Solution.

We abstract as follows from a paper by Dr. Aldridge Matthews (*Med. Med. Jour.*): While this is not a new subject, normal salt solution having been in use for many years, its value has become widely recognized, and it is being more and more used every day. Its value should not be underestimated in either surgery or medicine. How could the surgeon do without it? It is practically out of the question, for many hundreds of lives are saved every year that unquestionably would be lost if it were not for the use of salt solution.

The administration of normal salt solution supplies fluid to the body exhausted from loss of fluid through excessive purging, as in cholera, or in case of hemorrhage. It may be used to wash

from the body various impurities circulating in the blood and lymph channel and to flush out the kidneys. In other instances it may be used to supply the body with fluid when liquids cannot be swallowed or retained.

It is not safe to infuse into the intercellular spaces a greater quantity of liquid than one drachm to each pound of body weight in each fifteen minutes, for if this amount is exceeded the tissues become thoroughly saturated, drowned, so to speak, kidneys and skin being unable to excrete the liquid fast enough. (Hare.)

There is no excuse for not using it, since boiled water can be had almost anywhere. One teaspoonful of common table salt added to a pint of water will make about the right proportion, at least near enough for all practical purposes. Of course, where there is plenty of time, it should be made up with distilled water, and should be six-tenths of one per cent. in strength. If it is not possible to get distilled water, filtered boiled water will answer every purpose, and this is most generally used. One should not hesitate, if the sodium chloride cannot be had, to use plain boiled water in case of extreme emergency.

The temperature should be from 112 to 115 deg. Fahrenheit. If in a hurry, the temperature can be estimated by pouring some of the solution over the hand. It should feel comfortably hot, for some allowance must be made for the loss of heat in passing through the apparatus.

While many contrivances can be used for infusion or transfusion, the most satisfactory is Kelley's infusion apparatus, which is well known, simple and easily sterilized by boiling.

The best method of administering salt solution is by the rectum, and an untrained person can administer the solution in this way: The ordinary rectal tube and the irrigating can are generally used, but a male catheter, enema point or piece of gum tubing inserted well up into the rectum will answer every purpose. The fluid should be allowed to flow in slowly. A pint to a pint and a half, or even two pints, may be considered the proper amount of the solution. It is well to turn the patient on the left side and elevate the hips, causing the fluid to run up into the sigmoid. On the operating table the Trendelenburg position is most favorable, allowing the fluid to run well up in the colon. If the patient is restless and cannot retain an enema, or when an enema cannot be given, the infusion should be resorted to.

It is better to infuse than to transfuse, for the reason that

when we infuse, or give solutions by rectum, the fluid is taken up by the lymphatics and has to pass through the lymphatic channels, becoming truly a part of the body fluids, while in transfusion the fluid is thrown directly into the blood and undergoes no physiologic change. Transfusion should be done in preference to infusion only when the pulse is very weak and we want immediate results. Then a vein should be opened and the saline solution allowed to flow in slowly. It is usual to open the median basilic, but on several occasions I have opened the brachial vein, which is larger, and, on that account, more convenient.

I have twice seen ill effects following an infusion. In one a nurse infused a strong salt solution under a child's breast, which resulted in a large slough. In the second instance a small vessel was punctured and a large clot of blood formed in the right sub-clavicular space, requiring evacuation by an incision.

Following is the history of a case of typhoid fever, in which I found saline solution very useful:

The young man, aged about twenty, had a very severe attack of typhoid. I saw him on the fourth day of his disease. His temperature at that time was 104 deg., pulse 102. He was in a semi-conscious condition and a very unpromising case. During the first nineteen days his temperature remained most of the time above 104 deg., going frequently above 105 deg., and on one occasion reaching 106 deg. His temperature after this gradually subsided, and reached normal on the twenty-seventh day, but then rose, and did not reach normal again until the fifty-fourth day. Tubbing had little or no effect upon the temperature. Ice-water enemas, one pint every two hours, seemed to have little or no effect. His toxic condition was very grave. This patient got 700 cubic centimeters of normal salt solution subcutaneously twice a day. He got thirty infusions in all—two every day for two weeks, and on two of the days when he was most ill an extra one, making thirty infusions in fourteen days.

These infusions were given under the pectoral muscles, except four, which were given in the flanks. There was no bad local effect, except a little stiffness or soreness, which lasted for a few days after the infusions were stopped. Before I began the infusions his mouth and tongue were parched and dry. Shortly after the infusions began these conditions were greatly improved. He secreted large quantities of urine, and had to be catheterized frequently. I feel confident that the salt solution

saved this man's life. I have seen similar good results from the salt solution in cases of pneumonia.

While I will not attempt to enumerate the conditions which loudly call for the normal salt solution, the most important ones are excessive hemorrhages, toxemia arising from various forms of infection, as in septicemia, uremia, the comatose state of diabetes mellitus, in cholera and in threatened eclampsia. It is also very useful in severe burns to overcome shock and toxemia.

The best place to give an infusion is under the mammary gland in women, lifting the gland well up and inserting the needle beneath the lower outer quadrant, pointing upward, and allowing the solution to flow in slowly through a needle about two millimetres in diameter. The needle should be inserted while the solution is flowing so no air can be introduced.

The loose cellular tissue and the breast quickly begin to distend; even a flatly atrophied organ will reach the size of a puerperal breast. The amount that can be easily put under a breast is about 700 cubic centimetres. It is more satisfactory in the male, and in emaciated individuals, to lift the pectoral muscles, directing the needle upward and inward so that the fluid will infiltrate the subclavicular and axillary spaces.

The proper temperature of the fluid can be maintained by letting the tube carrying the saline solution lie immersed in a pan of hot water, about 115 deg. Fahrenheit. The saline enemata, which are often preferable, are best given in the way adopted by Murphy and the Mayos, that is, by inserting a small rectal tube and allowing a small stream of hot saline solution to flow into the rectum continuously. A large amount of the solution is thus taken up in the course of a day. The flow can be regulated by the elevation of the vessel above the individual, or, better, by a clamp on the tubing, limiting the flow to a very small stream, not more than a pint an hour. In surgical cases under anesthesia, it is well to give a pint by rectum before the patient awakens, for if given while awakening from the anesthetic the patient will nearly always expel it.

I have spoken of transfusion, and only recommend that it be used in very exceptional cases. It is a well-known clinical fact that some cases of shock are not much benefited by intravenous infusions of saline solution.

“Paw, when there's a big banquet, why do they always have spoiled cheese to wind it up with?” “Because, my son, it makes you forget the earlier courses.”—*Chicago Tribune*.

Stricture and Scar Treated with Fibrolysin.

A patient observed by Dr. Weisselberg accidentally swallowed a small amount of strong soda lye and sustained severe strictures of the esophagus as a consequence. Only soft and liquid food could be passed into the stomach, and the use of sounds was unsatisfactory, owing to the dense character of the scar tissue. Twenty injections of thiosinamine had no effect. Finally, 2.3 Cc. of fibrolysin solution, or the entire contents of a vial, were injected under the skin of the back every second or third day. Very soon the upper two strictures softened, so that the largest sounds could be easily introduced. The cardia was not, however, permeable for even the finest sound, and the food stagnated here, to be vomited up after several hours. In the meantime the patient steadily lost ground and could hardly stand erect. After thirty-seven injections of fibrolysin the thinnest sound finally passed into the stomach, and after this rapid improvement set in. Vomiting ceased entirely, the patient soon could swallow, and quickly gained in weight. The total number of injections made was fifty. The only untoward symptoms were slight pain after the injection, and two small abscesses.—*Muench. med. Woch.*, 1906, No. 33.

A. von Planta injected the contents of a small vial of fibrolysin intramuscularly every second day into the gluteal muscles in the case of a girl who had sustained a severe burn on the forehead from fuming nitric acid, which had left a very hard and disfiguring scar. Improvement was seen after the fifth injection, and after the twenty-fifth injection the scar was softer, less prominent, and resembled more the surrounding tissues. Bad after-effects were not seen, and no pain was complained of after injection.—*Corresp. f. Schweiz. Aerzte.*

Which Wins.

"When my son-in-law married my daughter, in addition to the dowry I loaned him a lot of money."

"Have you got anything back?"

"Yes. I got my daughter back."—*Translated from Fliegende Blaetter for The Literary Digest.*

Mr. Cityman—"I should think you would die of ennui out here."

Uncle Silas Cornassel, of Oatmealville—"No, sir; chills an' fever seems to be the prevailin' ailment."—*Philadelphia Record.*

Miscellaneous.

Basedow's Disease Treated with Antithyroidin.

Dr. Aronheim reports the case of a girl seventeen years old, who suffered from bilateral exophthalmos, struma, and a frequent pulse. After having been treated ineffectually for some time, antithyroidin was given, with the final result that all the symptoms were remarkably improved.

In a second case, no less typical, the serum also did more good than all other remedies previously employed.

The author calls attention to the many cases of Basedow's disease where one or more of the typical symptoms are wanting. Thus, in one instance there was no exophthalmos, but palpitation of the heart, precordial distress, dyspnea, general weakness, anorexia, cough, nocturnal sweats, insomnia, a moderate struma, dilatation of the ventricles, and slight dulness at both bases of the lungs. A diagnosis of pulmonary tuberculosis was seriously considered, but the sputum examination was negative. A teaspoonful of the following prescription was then given three times a day: antithyroidin, 4. (1 dram); Vin. Tokay, 20. (5 drams); aqua, 100 (3 1-3 oz.). After two doses, subjective improvement was noticeable. The dyspnea, cough and heart action no longer caused distress, and the temperature soon returned to normal. The dose was soon increased by one-half, and it did not take long until the catarrhal symptoms and the dilatation of the heart disappeared. At present the patient feels perfectly well, although the goitre has not diminished in size. From time to time she takes 3 to 4 drops of the serum three times a day, diluted with wine and water.

J. M. A. Gevers Leuven also reports a case of Basedow's disease with the following most prominent symptoms: Tremor of hands, tongue and face, dilatation of the heart to the left and right, systolic murmurs over the heart, exophthalmos, excessive perspiration, increased reflexes, general nervousness, a pulse frequency of 135, and struma. The usual remedies had no effect whatsoever. The patient was then ordered to bed and antithyroidin was given in the following doses: At first 0.5 Gm. (8 min.) twice a day by mouth; 0.5 Gm. three times a day, 0.75 Gm. (12 min.) t. i. d.; 1 Gm. (15 min.) t. i. d.; 1 Gm. twice a day. After about 90 Cc. (3 oz.) had been used, the treatment was restricted to general tonic drugs. The tremors, perspiration and pulse frequency were improved remarkably, the thyroid tumor softened, the weight increased. Disagreeable after-effects were not seen.—*Muench. med. Woch.*, 1906, No. 32.