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NORMAL VACCINATION.

By H. R. FRANK, M.D., C.M., Brantford, Ont.

In presenting this paper on Vaccination I must ask you to pardon my digression in places from the order of the programme and to accept my apologies for what, from the nature of the subject, must be largely a simple refreshing of our memories.

When we come to discuss the question of "Normal Vaccination" however, we find that the literature of a few years ago needs some revision. It was then the inoculation of the human subject with the virus of cowpox, plus any other virus, micro organism or contaminating influence that might happen to be present in the beast or subject from which the lymph was taken, followed by a train of symptoms due to any one or many of these influences. To-day when we speak of "Normal Vaccination" we mean the inoculation of the human subject with the "isolated" virus of cowpox, freed from all contaminating influences, and followed by a definite reaction peculiar to the disease. Under favorable circumstances the inoculation of the virus is followed by a period of incubation during which the patient has no experiences other than those attendant upon scarification. At the conclusion of this period we have the appearance of a papular eruption surrounded by a reddish zone; this papule merges into a vesicle, at first fully distended with a clear fluid. In a short time however the centre becomes depressed, and as we see the fluid in the vesicle assume the more opaque appearance of the pustule we find the umbilication more marked, the centre becomes dry, forms a scab which gradually approaches the periphery, until finally it covers the entire pock. As the eruption is passing through these different stages we find the surrounding parts swollen, indurated and painful; the skin displays a well-marked areola of redness and the surrounding glands become swollen and tender to the touch. On the desquamation of the scab we have at first a dusky red scar, which after some months becomes white and pitted. These local manifestations are accompanied by constitutional symptoms of a more or less regular type depending for their degrees of severity upon the constitutional susceptibility of the patient, and the dose and virulence of the lymph. Ordinarily on the appearance of the eruption there is some slight rise in temperature with

more or less lassitude and anorexia. In those most susceptible we may have chills, headache, backache, a more marked rise in temperature and very occasionally in children we have common eruptions, e.g. erythema, roseola, or urticaria.

The discussion of the technique of the operation should require but little attention here as the procedure is familiar to all. The selection of a point of inoculation sometimes gives rise to discussion. In the adult the outer surface of the lesser used arm, at the point of insertion of the deltoid muscle is chosen as being the part most easily put at rest. In infants that portion of the abdominal surface between the anterior superior spine and the rib is said to be a very acceptable spot, inasmuch as there the clothing will give the least trouble and the parts are comparatively at rest.

In preparing the site for inoculation one word of warning in this age of antiseptics should be spoken and that is against the too free use of these same antiseptics; asepsis should be sought, plain soap and water with a sterilized scarifier to my personal knowledge has improved the results of many physicians who were in the habit of using germicidal soap and carbolic, etc. Remember that we are dealing with an attenuated virus whose sensitive virility we are striving to retain.

The multiplication of the number of points of inoculation is advised by many, and Marson of London, has argued strongly in favor of this but later Welsh of Philadelphia has collected statistics to show that quality and not quantity is the essential feature and after all, gentlemen if we wish to popularize the practise of vaccination we must show some consideration for the feelings of our patients, and it is a lamentable fact that the day has not yet arrived when our young lady friends are proud of the foveated cicatrices following vaccination: moreover I do not recognize the *rationale* of demanding a number of local manifestations for the essential constitutional condition which is just as thoroughly obtained by one as by a hundred inoculations.

In bringing the virus in contact with the absorbents it is only necessary to abrade the horny layer of the cuticle too great oozing of blood being undesirable. The lymph is quickly applied, rubbed in and allowed to dry for a few moments, when the site of inoculation should be protected by some such means as absorbent cotton and adhesive. After a few hours this should be removed and until the appearance of a vesicle the part requires no attention; then some soft aseptic material should be applied to the eruption to save it from the clothing. If the parts become painful and swollen, the application of a thoroughly boiled poultice, followed by a liberal smearing of oxide of zinc ointment has given splendid results. During the progress of the symptoms a light diet, aperients and moderate exercise should be advised.

Briefly this is what constitutes a normal vaccination in the vast majority of cases but it should be clearly understood that no hard and fast lines can be drawn between the normal and abnormal vaccination; the repelling power of the tissues inoculated to extraneous influences and the apparent impossibility of standardizing the virility of the lymph must of necessity lead to some variations in the character of the sequelæ.

At present all must be classed as normal vaccination which do not induce the appearance of any defined lesions other than those attendant upon the disease "cowpox" in its mildest or its severest form.

In comparing the findings of to-day with those of a few years ago the first irregularity we meet is in the period of incubation. The usual time allowed for the appearance of the papule is from three to five days. With the glycerinated lymph, however, I find that in a series of 355 successful vaccinations the average date for the appearance of the papule was between the eighth and ninth days, the earliest being on the fourth and the latest on the fifteenth day. To collect these figures I personally observed 500 cases, 58 of which were primary vaccinations, all of which were successful, and developed the papule on the seventh day (average); of the remaining 442 a number had been vaccinated within the last year and the vast majority of the 145 unsuccessful cases during the last five years. Here I might allude to the doubt that exists in the minds of many as to the virulence of the glycerinated lymph. I think that the result in this series should demonstrate its efficacy; 71 per cent. of successful vaccinations is a very satisfactory result when we consider that the great majority were cases of re-vaccination many within a short period, and the greater number were among school children and men in shops where a personal direction as to the subsequent care of the part was necessarily limited.

To return to the question of the lengthened period of incubation, we must bear in mind that the old lymph "non-glycerinated" owed a great many of its attendant sequelæ to extraneous influences, the explanation that most readily offers itself is that the inflammatory action which we used to get on the 3rd and 4th days was due to the inoculation of these bodies which are invariably found at the seat of inflammatory action, and was not the true reaction following the inoculation of the "isolated" virus. That the presence of these outside influences served to stimulate the activity of the vaccine I have not found inasmuch as the progress of the symptoms, from the appearance of the papule to the formation of the ultimate scab has not been lengthened perceptibly.

Another feature which must be remembered in connection with the irregularity of the appearance of the reaction is the difference in the degrees of the virulence of the samples of lymph used and that this variation in strength should exist is not to be wondered at when we consider what a sensitive body glycerinated lymph is.

In a later paper you no doubt will be told how susceptible it is to the influence of both light and heat and how a thoughtless chemist or physician may expose his stock to either one or the other, the proximity of a register or an open package in a surgery will I am sure account for a great number of not only delayed and weakened reactions but of unsuccessful vaccination.

Following the appearance of the papule we find that the eruption passes through the same stages as described in text books, namely, vesication, with umbilication and marked areola; pustulation and scabbing, and finally desquamation, with the foveated cicatrix. Just here I might warn against the acceptance as a thorough reaction any other than those

presenting these local manifestations and particularly is attention drawn to a spurious variety commonly known as the red raspberry excrescence; it just appears as a red elevation at the site of inoculation, closely resembles the papule of true vaccinia. It does not however progress to vesication, and the thin scab which forms over it, when it falls, leaves the original elevation which usually persists for some weeks.

The complications which can be truly considered as such, of a normal vaccination, are, with our modern lymph, and in the light of the researches of Copeman and others, reduced a very limited number.

Those due to a heightened inflammatory action of the skin are the most frequently met with, and even these can usually be traced to some injury to the pock or the introduction of some infection subsequent to the inoculation; or again there is a history of a pre-existing dyscrasia. For the most part they are not peculiar to vaccination, and are probably, according to Aldrich, "excited by some chemical irritant as distinguished from those which, like erysipelas, are due to micro-organisms". These eruptive troubles are as a rule of short duration and of limited severity, and with the knowledge of a pre-disposition or even in the presence of an exanthem we should not hesitate to inoculate when face to face with infection.

Probably the most serious complication is the development of a generalized vaccinia. This occurs usually about the time the pock at the seat of inoculation has arrived at maturity. The eruption appears in successive crops, and usually assumes the same appearance as the original pock; occasionally however, it so closely resembles the eruption in variola that it is difficult to differentiate. The appearance of the rash, however in generalized vaccinia is earlier than that in variola. The constitutional symptoms are less marked and it is also unusual to find the vaccinal eruption appear on the mucous surfaces. The great apparent difference is that generalized vaccinia is not communicable except by direct inoculation. As to the causes of generalized vaccinia little can be said beyond the marked susceptibility of the patient, auto-inoculation, the presence of general cutaneous eruption or the inhibition of the virus through channels other than the skin.

The most commonly troublesome complication is probably a localized necrosis following the maturity of the pock. The soft parts at the seat of inoculation slough and an ulcer is formed with the well-defined, clear cut edges; this complication can usually be traced to a want of care in the treatment of the arm, the confinement of discharges and the general lack of cleanliness. A thorough removal of the necrosed tissue is rapidly followed by resolution. A few other complications, such as vaccinia gangrenosa, vaccinia hemorrhagica, glandular abscess etc., are reported, but are of such extreme rarity that in a limited paper such as this they cannot be considered.

After observing over 2,000 cases of vaccination during the past 18 months these abnormalities, namely, skin eruptions, generalized vaccinia and localized necrosis were the only ones observed that could be rightly termed complications and they were rare, only one case of generalized vaccinia being reported.

Previous to the extensive investigations of Copeman, Klins and others, a host of infections were classed as complications of vaccinia, but since these men have so clearly shown that the streptococcus of erysipelas, and the bacillus of tubercle, etc. are destroyed by being incorporated with a sterilized solution of pure glycerine and water, without markedly attenuating the virulence of the lymph, there is no reason why a carefully conducted inoculation should be followed by any sequelæ other than those discussed.

The use of the bovine lymph excludes the possibility of syphilitic infection and with the care now exercised in the preparation of the lymph and the selection of the animal, the rigid examination they are subjected to for the discovery of skin lesions or tubercle, the post mortem examination in search of unhealthy organs, and finally the testing of the efficacy of the virus before it leaves the laboratory, puts it almost beyond the realm of possibility that infection should be carried by the lymph.

In something over 1,600 cases I have had the opportunity of watching during the past two months I have yet to see any abnormal sequelæ. It is true reactions were severe in some cases, but it was just in those cases where the tissues were evidently not strong enough to cope with even an attenuated poison.

I am indebted to Dr. Elgin, Supervisor of the Biological Department of Mulford & Company for some valuable information in connection with the production of the modern vaccine, and also for his experiences in the laboratory of individual antagonism to the action of the virus. He tells me that it is a common thing for employees who are constantly subjected to inoculation to develop reactions several times in the same year, until finally as it were a point of saturation is reached when the individual no longer "takes". His experience also shows that the individual is rarely, if ever, always, at all times, immune from the action of vaccine virus, inasmuch as persons may be exposed to inoculation for months and not show reaction, but the time invariably comes when they develop the typical vaccinia.

A CASE OF ADVANCED ARTERIO SCLEROSIS IN A CHILD.*

BY ALLEN BAINES, M. D., C. M.

Associate Professor of Medicine, Lecturer on Pediatrics, Trinity College, Toronto.

The rarity of this condition in early life caused me to bring this case before the Society and to report it as fully as possible. I can find only the cases published by Holt, seven in number, and the case of Brill and Libman† which made me feel that the presentation of this one with specimens and slides would be of interest to the Fellows.

In none of the cases which I have read, can I find that the sclerotic condition existed so generally as in this. In them only certain vessels had undergone change whilst in my case, with the exception of the cerebral vessels, everywhere in the body the changes were found to have taken place. During life in tracing the various superficial arteries, all gave the pipe stem touch and resistance which one generally associates with the calcareous condition of vessels frequently found in old age, and this will be seen to be verified by the specimens.

The etiology of the subject I do not purpose touching on. It is fairly well known and agreed upon, syphilis being probably the most frequent cause of its production amongst the young. Heredity, nephritis, scarlet fever, diphtheria, rheumatism, gout, alcoholic and lead poisoning are the chief factors other than syphilis.

Willie F., aged ten years and six months, born in Toronto, admitted to the Sick Children's Hospital, December 10, 1900.

FAMILY HISTORY.—Father living, healthy mechanic, always strong and healthy, says he was never ill, absolutely denies ever having had any specific disease.

Mother, living and healthy; no illness beyond child bearing; no miscarriages, nor any manifestation of syphilis. Brothers, three, living and healthy. Sisters, two, living and healthy. No signs of vessel change in any of them, or any sign of hereditary syphilis or struma.

PAST HISTORY.—Had measles at seven years of age. For past two years had suffered from chorea on and off; attacks lasting from two weeks to ten weeks. For several months he has suffered from nocturnal enuresis, always wetting the bed unless he got up to pass urine during the night. Drank water in large quantities, and if he should awake, would get up to take a couple of glasses of water. No history of scarlet fever nor diphtheria. Always been strong and healthy, capable of outdoing most boys of his age at running and games requiring physical activity and endurance. Could get no history of snuffles or rash, his mother reporting him, with the exception of the chorea, as particularly healthy, never having had a suspicion of rheumatism.

*Read before the American Pediatrics Society, Niagara Falls, N. Y., May 27, 28, 29, 1901.

†*Journal of Experimental Medicine*, Vol. iv., Nos. 5 and 6.

PRESENT ILLNESS.—On the evening of December 3, 1900, he complained of severe headache. During the night had eight convulsions and vomited three or four times a watery fluid. The glands on the right side of the neck became swollen. The family physician being sent for, ordered him to bed. On December 5th, his mouth became filled with dark blood clots; antiseptic mouth wash and styptics were ordered. The bleeding being profuse, and not lessening, the doctor ordered his removal to the Sick Children's Hospital on December 10th.

EXAMINATION ON ADMISSION.—Patient pale and anemic, lips bluish-white expression dull, languid and sleepy, fairly well nourished, body and head found in a filthy condition, necessitating several hot baths before being satisfactorily cleansed. Does not look intelligent, face and manner indicating low social status, eyelids puffy breath extremely offensive, pervading the atmosphere of the whole ward. Teeth discolored and much decayed. Right second upper molar sharp and projecting horizontally into the cheek. The mouth full of blood clots which formed every hour or so; this blood appeared to proceed from a cavity in last lower molar and from ulcers on the cheek—four in number. Three of these were of the size of a ten-cent bit, one as large or larger than a twenty-five cent piece. The edges were red, hard and raised, irregular in shape, covered with a yellow slough, which when touched bled freely. The gums blue-red, swollen and everted from the teeth, with a dirty yellow pus oozing between the teeth and gums. Tongue tender and covered with a black hard coat. The filthy condition of the patient, the stench from the mouth and the large unhealthy ulcer suggested cancrum oris, but the rapid way in which the patient improved under the administration of pot. chlor. manifested the fact that the condition was stomatitis ulcerosa.

December 11th.—Mouth has been kept clean with antiseptic washes, but hemorrhage still continues. I ordered the bleeding points to be touched with solid perchlorid of iron and a small piece was placed in the tooth cavity, which was bleeding freely. This application acted very well, the bleeding ceasing during the afternoon.

December 12th.—Condition of mouth much improved; no bleeding; tongue cleaning at tip; patient very drowsy: temperature 100°; pulse, 110; vessels noticed to be generally hard and resistant to touch.

December 14th.—Marked improvement; urinalysis shows albumin, 8 per cent. bulk, specific gravity 1009; microscopically nothing was noted; pain on deep pressure over right side of the abdomen and back and over kidney; no edema; skin dry and harsh; gums still bleed on slight pressure. A small opening like a tiny white ring was seen on the gum, which probably was the open mouth of an artery, from which most of the hemorrhage proceeded.

December 20th.—Had a severe epistaxis from right nostril, lasting for two hours, controlled finally by a saturated extract of suprarenal capsule plug; ulcers rapidly healing; tongue clean and fetor of breath much improved.

December 25th.—Another severe attack of epistaxis from the left nostril; application of suprarenal capsule extract, soon subdued.

December 27th.—Only one ulcer left on cheek.

December 28th.—A third attack of epistaxis. Careful examination of all the palpable arteries revealed sclerotic condition; the blood current being cut off by pressure, left them as hard, resistant cords, the walls being evidently sclerosed and the stream needing firm pressure to be cut off; heart enlarged, left border being to left of nipple line. This condition of vessel wall readily explained the difficulty of controlling the hemorrhages which had occurred from the mouth and nose.

January 3rd.—Epistaxis occurred; vessel could be plainly seen spurting from right septum.

Urinalysis shows albumin 3 per cent. bulk, specific gravity 1008; microscopic examination negative; has been quiet and drowsy for the past three days; amount of urine passed in twenty-four hours, 29½ ounces.

January 7th.—Has great dyspnea; respiration rapid and labored. Precordial distress—hard cough with pain, especially over liver region; pulse 130, strong and regular; liver extends three inches below costal margin, very tender on pressure; heart, apex displaced downward and outward; impulse diffused but strong; a strong, rough, systolic mitral murmur; veins in neck prominent; *alæ nasi*, dilating.

January 8th.—Easier to-day; abdomen has become tympanitic; pulse, 125.

January 9th.—Bowels have not moved since January 6th, resisting all purgatives and enemas; abdomen still more tympanitic; pulse, 90; temperature, 95°; heart sounds weak.

January 10th.—Gradually weakened during the night; respirations very slow, intervals of five to twenty seconds; died at 10 a.m.

Treatment consisted of antiseptic mouth washes: soda sulphocarbolate solution every hour or two with local applications of solid perchlorid of iron and internally potassium chlorate and muriated tincture of iron for dyspnea; morphia and strychnia were given, and towards the end glonoin and nitrite of amyl.

Prof. Anderson submits the following microscopic report:

Kidneys both presented practically the same condition. The capsule showed marked fibroid thickening and beneath the capsule is an area in which there is great increase of the interstitial tissue, so as almost to replace the parenchyma of the organ. This area is infiltrated with large numbers of small round cells, mostly proliferated connective tissue corpuscles, but some polymorphonuclear leucocytes. Throughout other parts of the sections there is a well marked fibrosis, in some places almost replacing the tubules. Many of the glomeruli show extreme fibroid, hyaline-fibroid, or hyaline change. The vessels of the kidneys show all degrees of sclerosis, with narrowing of their lumina, some of the smaller ones being practically obliterated. Their walls in places present hyaline or hyaline-fibroid changes. There is considerable polymorphonuclear infiltration of the interstitial tissue and glomeruli in all parts of the sections. The epithelium, especially of the convoluted tubules, is swollen, opaque, granular, and often desquamating so as to fill up the tubules. Many of the tubules contain casts, hyaline, granular, or at times, partly

hyaline and partly epithelial. In fact the specimens show the contents of the tubules in various stages of transition from the fairly definite epithelium to partly or completely hyaline material, giving a beautiful illustration of this method of cast formation. The vessels throughout present well marked congestion. Many of the tubules contain polymorphonuclear leucocytes.

The histological examination would indicate an advanced degree of interstitial nephritis with arterial sclerosis and an acute inflammatory condition grafted on top of the chronic process.

The femoral arteries were the only ones submitted for examination. They show well marked sclerosis involving all the coats to some extent, and narrowing the lumina. There is thickening in some places internal to the subendothelial elastic layer. The vasa vasorum in the media and adventitia also present sclerosis, in places almost obliterating them. Around many of the vasa vasorum is a proliferation of connective tissue cells. The inner parts of the tunica adventitia and the tunica media present a more or less hyaline appearance in places, a degeneration possibly resulting from the interference to their nutrition from the morbid changes described in the vasa vasorum.

Report of the post-mortem examination on the body of W. T., aged twelve years, autopsy January 10, 1901, six hours after death. Rigor mortis well marked. The usual post-mortem staining is present. Veins over the upper part of the thorax are prominent. Slight pitting about the ankles from edema. The arteries at the wrist, elbow, in the axilla, neck, thigh, popliteal space, and at the ankle are readily felt and can be rolled beneath the fingers.

THORAX.—Pericardium contains $2\frac{1}{2}$ ounces of slightly turbid fluid; no pericardial adhesions.

The heart weights $8\frac{1}{2}$ ounces. On the anterior surface of the right ventricle is a rough, reddish, granular patch the size of a twenty-five cent piece, and some similar patches are seen at the base of the great vessels. The coronary arteries show well marked general fibrosis with some patchy areas of atheromatous deposit. The heart muscles is hard and presents extensive areas of fibrosis. The endocardium, especially in the right ventricle, is whitened and thickened. The walls of the left ventricle are markedly thickened from hypertrophy, those of the right ventricle are hypertrophied to a lesser extent. Both auricles appear somewhat enlarged. The valves and orifices present nothing worthy of mention except slight thickening of the margins of the mitral cusps. The ascending and transverse portions of the aortic arch show nothing abnormal; the descending portion shows some scattered, irregular, yellowish patches of atheroma. These patches of atheroma become more numerous and extensive lower down, and in the abdominal aorta are particularly well marked. All the branches of the abdominal aorta stand open on section and show very definite fibrosis; the smaller the vessel the more marked the condition.

Left pleural cavity contains $2\frac{1}{2}$ ounces of straw-colored fluid. No pleural adhesions. Right pleural cavity adhesions of lower lobe to diaphragm, readily broken down. Both lungs crepitant throughout; some hypostatic congestion.

ABDOMEN.—Liver four fingers' breadth below the costal margin. Weight 31 ounces; cuts with resistance; slight nutmeg appearance.

SPLEEN.—Enlarged, soft and friable.

KIDNEYS.—Right somewhat lobulated; surface granular; capsule strips off with difficulty; cortex much narrowed; on section the organ is pale and mottled.

Left extremely small and lobulated, capsule adherent, surface granular, cortex extremely narrowed, almost imperceptible in places, a number of small ecchymoses in the pelvis. Ureter and pelvis on left side dilated, not so on the right side.

The other abdominal organs presented nothing calling for special mention.

BRAIN.—Vessels at base and elsewhere are soft and show no sclerosis.

Fibrous tissue throughout the body appears to be increased.

Urine removed post-mortem shows on analysis the following:

Specific gravity 1007, reaction acid, albumin present in large amount.

Microscopic examination shows the presence of numerous hyaline and granular casts; also many epithelial cells and *debris*. The epithelial cells show granular degeneration.

AN ANAESTHETIC CHART.

The following chart arranged by Dr. Charles O'Reilly, of the Toronto General Hospital, has been widely adopted in Hospital practice.

ANÆSTHETIC REQUIREMENTS.

Instruments.

Tongue Forceps.
Mouth Gag.
Tongue Depressor.
Sponge and Holder.
Tracheotomy Tube.
Tracheotomy Knife.
Feathers, for tube.
Hypodermic Syringes.
Oesophageal Forceps.
Davidson Syringe.

Miscellaneous.

Wax Candle and Matches.
Large Fan.
Blocks or Bricks to elevate table.
Conical Jaw Opener.
Battery.

Restoratives.

Liq. Amm. Fort.
Spts. Amm. Arom.
Brandy and Whiskey.
Liq. Strychnin. (dose 5-10 minims.)
Ether.
Tr. Digitalis.
Sol. Green Tea
Amyl. Nitrat. (Pearls.)
Oxygen Gas.
Nitro-glycerine ʒi to gr.

Miscellaneous.

Towels for Friction.
Hot water Bottles, Cold Water.
Ice, for rectum.
Forced Respiration Apparatus.
Saline Solution, ʒi. to ʒi.

Form to be Filled in Before the Administration of an Anæsthetic.

Name.....Disease.....Age.....Sex.....
 Birthplace.....Occupation.....Ward No.....
 House Surgeon.....Date of Admission.....Date of
 Discharge.....Under care of.....Report taken by.....
 HABITS: Alcohol.....DISEASES: Epilepsy.....
 Opium.....Apoplexy.....
 Cocaine.....Bright's Disease.....
 Other Drugs.....Other Diseases.....

Patients Condition.

Pulse before.....during.....after.....Circulation.....
 Heart.....Lungs.....Nervous System.....
 Urinary Analysis—Sp. Gr.....Albumen.....
 Reaction.....Sugar.....
 Anæsthetic commenced at.....Discontinued at.....
 Anæsthetic used.....Amount used.....
 State of Stomach during operation.....
 Return to consciousness at.....
 Date.....Administrator.....M.D.

*General Remarks:***THE BROMIDE SLEEP.**

DR. ARTHUR A. SMALL, B.A., M. B., L.R.C.P., M.R.C.S., Toronto.

That it is perhaps possible by means of acute bromidism to quickly and permanently obliterate the desire for morphine, chloral, cocaine or alcohol without the usual subsequent suffering and without creating another drug habit in cases where these drugs have been taken for several years in larger than medicinal doses, is I think sufficient excuse if one be required for the production of the Bromide Sleep.

This treatment was first described and used by Neil MacLeod of Shanghai, who now reports nine cases. I will read a short report of his treatment of the first of these cases in which the Bromide Sleep was produced by mistake. "In 1889 a married woman aged 25 suffering from neuralgia for which she received hypodermic injections of morphine, the habit being continued without break until May 1896 in spite of several attempts to withdraw the drug slowly: on May 17th I ordered her a 12 ounce bottle containing 12 drachms of sodium bromide, a half ounce of the mixture to be taken every four hours: on May 18th she was drowsy, and on May 19th I found her so soundly asleep that I could not wake her. The pulse, temperature, respiration and skin were normal. The whole bottle and half of a second one had been given. For four days no intellectual, emotional or volitional effort was observed and only a little milk was swallowed daily. The patient could not stand or sit, muttered in an-

swer to questions and passed urine and stools in bed. Then followed a period of restlessness, and intellectual and emotional confusion, during which time she asked for nothing and muttered incoherently. Speech at first like other movements was greatly enfeebled and not co-ordinated, gradually however, becoming stronger and more distinct; delusions and illusions of sight at first numerous, slowly disappeared and were not noticed after June 7th. She left Hospital on June 17th feeling quite well. To her own astonishment and that of her sisters she had no desire for morphine from the time she entered the Hospital, and I am glad to say it has not yet returned."

By the Bromide Sleep is meant a condition lasting from five to nine days, in which the subject sleeps day and night and from which he cannot be roused. He will pass urine and stools in bed if left to himself but can be prevented by being placed on a commode and held there for a few minutes every six hours. Following this sleep is a gradual recovery of the powers of locomotion, speech and thought, the progress being daily visible. With perseverance, care and the administration of a tumblerful of milk every two hours, little loss of weight need occur except of wasting of muscles. After recovery in no instance has any indication of interference with nervous functions been observed.

The best method of giving the bromide is probably yet to be worked out, but so far MacLeod says "I am inclined to give only in the day time." Having taken the weight of the patient and ascertained that there is nothing to contra-indicate the treatment in the way of organic disease, the sodium bromide may be given in two drachm doses in a half tumbler of water every two hours until an ounce is given the first day; the second day a similar amount is given in the same way: if this dose does not suffice it may be repeated on the third day. It must however be remembered that the full effect of the drug is not manifest for at least twenty-four hours after the administration of the last dose. The following advantages over other methods of treatment can be claimed for the Bromide Sleep:

1. It does away with the suffering entailed by stopping the drug.
2. The patient cannot bribe the attendants nor can he deceive his physician for he is powerless.
3. No taste is likely to arise for bromide given in this way.

The case of my own which I wish to report is of interest chiefly because of the negative result (as regards sleep) which the very large doses of bromide had on the patient. The case was one of alcoholic habit of many years standing in a man forty years of age who at the time of consultation was in a highly nervous and excitable condition and had for many days been suffering from insomnia.

The first day of treatment he was given nine drachms of sodium bromide in two drachm doses for the first four doses and one drachm at 10 P. M. The second day he was given eight drachms of the salt. He slept during the night but was easily awakened. The third day he was given ten drachms, and the fourth day eight drachms. During the afternoon of the fourth day he was somewhat drowsy and slept very well, during the night of the fifth day he had three drachms of the salt, which

was the last dose given : thus in five days he had taken six drachms and four ounces of sodium bromide. By the afternoon of the fifth day all drowsiness had disappeared and in order to insure a good nights sleep he was given fifteen grains of sulphonal. I might add that the bromide was given in soda water and did not seem to cause the slightest gastric disturbance.

Although the bromide in this case did not cause the deep sleep described by MacLeod (which however he says may not be necessary in order to effect a cure), nevertheless it gave what might be described as a normal sleep, which he certainly had not had for many days. I might add that during the treatment the patient's temperature was sub-normal, varying between 96.2 and 98° Fahr. and I may also say that so far the alcoholic craving has not returned, but how long that will last time only can tell.

A PECULIAR CASE OF MASTOIDITIS.

By CHAS. TROW, M.D., Toronto.

A male patient *æt* 58 (but looking much older) some months ago gave a history of catching cold in the head, and the hearing becoming dull he went to a druggist who gave him some "ear oil" and told him to syringe out his ears. He came to me two weeks after the first symptoms with ceruminous plugs in both ears, and after I removed them I found both drums perforated and a considerable amount of pus discharging from the middle ears.

He also had a chronic hypertrophic nasal catarrh, and a chronic suppurative dacryocystitis in the right eye. Within a month he says both ears got well and no discharge; but then he sat by an open window in the draught and caught cold, and when he came to me again, the left ear was standing out from head with a large swelling behind it. I ordered an ice bag applied for a few days and then pus was felt on examination, and as he refused to go to the hospital I made an incision into the soft tissues and drained it out. The swelling went down and the skin healed, but in a few days more the tissues became swollen again and I insisted on a mastoid operation which was performed in the hospital under chloroform, chiselling and scraping out all the diseased bone in the mastoid. The wound was freely sprinkled with iodoform and packed with iodoform gauze. Two days later the patient became insane and the next day persuaded his friends to take him out of the hospital. At his home I dressed the wound and ear, particularly cleansing away all the iodoform thinking possibly it might have caused the mental aberration, and used boracic acid and acetanilid instead. A physician and a surgeon were called in consultation and we all came to the conclusion that the brain lesion was due to senile decay. The patient had been a very steady hard indoor worker never taking a holiday, and looked twenty years older than the age given. However in about six weeks the mental trouble got quite well under tonic treatment, close watching and good nursing. The mastoid and middle ear were healed and well within three weeks from the operation. There had been no pain or rise of temperature or bad symptoms about the ear after the operations; but still the ear lesion seems to have been the cause of the brain trouble.

THE PRIMARY TREATMENT OF BURNS AND SCALDS.*

By H. A. BRUCE, F.R.C.S. Eng. Toronto.

When the president of this association asked me to read a paper on this subject I readily acquiesced, thinking it would be a very easy matter to deal with, and would entail no great amount of labor. The very simplicity of the subject, however, makes it very much more difficult to me to give you anything that you do not already know, but I hope that the discussion which will be participated in by those who have had large experience in treating burns, will bring out many practical points which will be of real service to the members. In looking over the literature of this subject I have been impressed with the number of remedies recommended, each having advocates and each giving very satisfactory results, if you are to believe in every instance the favorable reports of admirers, and possibly discoverers. This is, I take it, an evidence that we have as yet no one drug which is universally accepted as a specific. We must, therefore, aim at formulating certain principles of treatment, the carrying out of which will probably be equally well done by more than one remedy. In the first place, we must remember that the constitutional condition requires active treatment, as well as the local injury. The general treatment will depend largely upon the extent of the burn. When our patient is suffering from severe shock our first duty will be to apply suitable remedies for that condition. Warmth is of the greatest importance, and the patient should be wrapped up in warm blankets, he should be put to bed as quickly as possible, without a pillow, and the foot of the bed should be raised six or eight inches. Free stimulation is also important; perhaps the most rapid stimulant is ether injected subcutaneously in doses of from 20 to 30 minims. If, in injecting ether, the needle of the syringe be buried in the muscle, it will avoid the sloughing of the skin, which sometimes occurs after ether is used subcutaneously. This may be repeated every fifteen minutes if necessary, and brandy may be injected in the same quantity, still more frequently; strychnine is also useful.

Stimulants should also be administered, preferable in the form of a hot nutrient enema, containing half an ounce to two ounces of brandy with the yolk of an egg and an ounce of beef tea and milk. In severe shock an injection of hot normal saline solution into the rectum will be found of very great value. One or two pints may be given and repeated every two or three hours, until the pulse is of good volume. The advantage of this plan of giving salt solution over the transfusion into a vein is that the dilution of the blood does not occur so rapidly and hence there is not the same trouble about dyspnea. A very marked effect will be noticed in the pulse in a few hours after the injection.

When a nutrient enema has been administered, it is well to wait an hour before using the saline solution. I think there can be no doubt

* Reprinted from *The Railway Surgeon* of July 25, 1899.

that the shock is often to a large extent kept up by pain (which causes exhaustion of the nervous system) and it is therefore of importance to relieve this, if possible. An injection of morphine, preferable in combination with atropine, should therefore be given. If after the patient recovers from the shock symptoms of internal congestion or inflammation set in, the usual treatment for this condition will be necessary. During the stages of the sloughing and convalescence it will be necessary to support the patient's strength by a nutritious diet with plenty of milk and the use of stimulants and tonics. When the body is extensively but superficially burnt the depression is removed and the pain relieved by placing the patient in a warm bath. Visceral complications are usually of a congestive type, and for these we must rely chiefly on stimulants. Frequent full doses of opium will be required to relieve the irritability of the nervous system.

Now, as to the local treatment. This will depend upon the degree, and we will adhere to the classic division into six degrees, as originally proposed by Dupuytren. The treatment may be considered under four heads, viz., the treatment of the first degree, that of the second, that of the third and fourth degrees, and, lastly that of the fifth and sixth degrees.

In the first degree there is no breach of continuity, and therefore no danger of sepsis. Dusting the surface with any soft, simple powder relieves the pain by protecting the surface from contact with the air. Cold cream or glycerine or lead and opium lotion will also be found efficacious.

In the second degree, where blisters have formed, the cuticle should be washed antiseptically and then the blisters punctured and the fluid allowed to escape, but the epidermis should not be removed. The opening in the blister should only be of sufficient size to allow the fluid to escape; otherwise, if made too large, the epidermis is apt to peel off, exposing the papillary layer of the skin and causing a great deal of pain and retarding the healing. The area may then be covered with some antiseptic ointment, eucalyptus ointment of the B. P., or boric acid ointment (half strength) will do very well. This should be covered over with cotton wool and left for three or four days, when the part will have quite recovered.

The third and fourth degrees: When there is partial or entire destruction of the whole thickness of the skin or of the deeper tissues, as in the remaining degrees of burn, the parts must be kept aseptic, because after recovery from shock and for the first week or two afterward the patient's greatest risks are connected with sepsis.

We must now consider the best method of securing asepsis—a very difficult problem on account of the readiness with which burnt parts absorb fluids, and especially carbolic acid. One should not use carbolic acid as a disinfectant in burns on account of the danger of poisoning. The most suitable substance is bichloride of mercury, which may be used in the strength of 1 in 1,000 without any danger of absorption. By using plenty of soap to the skin in conjunction with a sublimate solution of the strength of 1 in 1,000, rapid disinfection of the skin is effected. In burns

the heat has to a certain extent disinfected the part, should there be no further soiling, and it is not necessary to use disinfectants as thoroughly as in preparing the skin for an operation. This is especially true when the burnt part has not been covered with clothes.

More care in the disinfection of the part will be necessary when covered with clothes. It may be necessary and advisable to administer a general anesthetic—preferably ether—so as to thoroughly cleanse the part without increasing the shock; so that in bad cases the procedure will be as follows:—Put the patient under an anesthetic, soap and wash the burnt area and the skin around, douche it over thoroughly with 1 in 1000 sublimate solution which is subsequently removed by douching with boiled water. The best dressing then is cyanide gauze wrung out of 1 in 6 or 8000 sublimate solution and over this salicylic wool.

This may be left on for three or four days or even a week without changing, providing there be no evidence of sepsis as indicated by rise of temperature, etc. The great advantage of a dressing of this kind is that while it keeps the part aseptic it also allows the discharge to dry on the surface. When the slough begins to separate and granulations are springing up, one of the antiseptic ointments will answer better than the cyanide dressings. Eucalyptus or the full strength boracic acid ointment does very well. When the slough has separated the wound must be treated as a healing ulcer. Lately, French authorities have recommended the use of picric acid as a dressing in burns where the cutis vera has not been entirely destroyed; it is claimed for it that it is more efficacious in allaying the intense pain (so often present), than the ordinary applications, while at the same time it possesses antiseptic properties. The vesicles are punctured and then a piece of lint soaked in a saturated solution of picric acid is applied and over this a pad of salicylic wool is firmly bandaged. The effect of the acid is to coagulate the albuminous fluid oozing from the wound and thus to form a protective layer over the exposed nerve endings of the skin. The application may be left undisturbed for two or three days and then soaked off with warm boric lotion and reapplied. In several cases in which this procedure has been used, we have been very pleased with the result. I think, however, it is most useful in the milder degrees of burns.

Just a word in reference to certain applications commonly recommended. Carron oil, for example, is a dirty preparation and responsible for a great deal of mortality after burns. The use of poultices of water dressings and dusting with flour are equally bad. As far as possible, the wound should be treated aseptically. If the attempt at disinfection fails and the wound becomes septic, probably the best method of treatment is the continuous water bath. If the trunk be affected and the burn large and painful and accompanied by constitutional disturbance, the patient is placed in a bath of water at the temperature of 100° F. containing a small quantity of an antiseptic, such as Condy's Fluid or Sanitas, and changed every three or four hours. It is well to take the patient out of the bath at night and apply wet boric lint, covered with a mackintosh (previously rendered aseptic). This method should be continued until the sloughs have separated and the inflammation has subsided. Now antiseptic ointments ap-

plied as for healing ulcers should be substituted. Where the extremities are effected special baths for the part may be used. Where the slough is situated over a joint or a serous cavity, and there is danger of either being opened when the slough separates, very great care must be taken in the aseptic management of the case, lest the part become septic and acute suppuration of the articula or serous cavity supervene.

The fifth and sixth degrees: The treatment of these has to be considered in regard to the extremities alone; if the burn be situated elsewhere the patient usually dies at once. Should, however, either of these degrees of burns be upon the skull or trunk, and the patient live, we must endeavor to keep the part aseptic and support the patient's strength and wait until the slough separates; then, if no vital part be involved, the defect will be gradually filled in with granulations and eventually skin grafting will expedite a cure. In the case of extremities, however, when the tissues down to and including the bone are completely charred, or when only the fifth degree is reached, and the tissues are destroyed over a large area, the question of primary amputation arises. Where the limb is hopelessly destroyed there can be no question as to amputation, the only point to be considered is where and when the amputation should be performed. Generally, speaking, it is better to wait until the shock has passed off, for if we operate before this the shock is apt to be increased, bringing about a fatal result. If the part be roughly disinfected and wrapped up in an antiseptic dressing it is usually quite safe to wait twelve or twenty-four hours till the shock is partly recovered from, and then by employing all the measures calculated to minimize shock, amputation may be proceeded with. As regards the seat of amputation, it is not necessary to go far above the charred tissue; certainly not above the region of the erythema.

It might be well for me just to mention some other applications used in the treatment of burns. Tillmans prefers aseptic dry powdered dressings to ointments or solutions. McInnis states that spirits of turpentine, applied to a burn of either the first or second or third degree, almost at once relieves the pain, while the burn heals. After wrapping a thin layer of absorbent cotton over the burn the cotton is saturated with turpentine and covered with bandages. Being volatile, the turpentine evaporates and it is therefore necessary to keep the cotton moistened with it. When there are large vesicles these are opened on the second or third day.

Acetanilid is also used. Ichthyol, in watery solutions, or in glycerine, or even in ointment form, and the iodine derivatives, such as iodol, aristol, europen, iodoform, airol, are reliable measures; also thiol.

In cases where shreds of clothing have been burned into the skin they should not be removed until the second dressing. Their immediate removal can only be accomplished by stripping away the flesh. While mentioning some of the many remedies useful in the treatment of burns I have tried to outline the treatment which I have seen most successful. Where we have to select some special remedy to be used by those laymen giving first aid in the case of burns, I think the best remedy we have is picric acid. I would advocate, therefore, the placing of a quan-

tity of picric acid on every train and in every station, with printed directions that in the event of a burn or scald a solution be made in water and this applied to the part, and lint or absorbent cotton, if procurable, soaked with it and made to cover the part. Turpentine is also a very good remedy to be used by the laity. In using either of these substances the part is not rendered more difficult of being made aseptic, whereas in the oily preparations it is very difficult afterward to render the parts aseptic.

TREATMENT OF NEURASTHENIA.*

C. C. Hersman has decided that rest is one of the best medicines for neurasthenia. Electricity and massage are particularly good with those who are put to bed. For those taking the rest-cure the hot bath at bed-time is one of the best possible things. In treating neurasthenia one of the first and most important steps is to gain the confidence of the patient.

Douglas Graham thinks it is generally conceded that electricity can be left off in neurasthenia. As to the massage, it depends, of course, upon how it is done. It is almost sure to produce sound sleep if properly given in the evening to neurasthenics who have been wakeful. But if neurasthenic patients who sleep well without massage are massaged in the evening they are sure to be wakeful after it, and they do not feel the loss of sleep next day; they have gained something after all.

D. R. Brower thinks that, neurasthenia being pathological fatigue, the first indication for treatment must be rest, mental and physical.

A partial rest is all the great majority require, and the amount must be carefully determined in each case. It is usually sufficient to have them retire early, get up late, and take one or more hours of rest at noon. This rest at noon should be in a quiet darkened room, should be absolute, with as perfect a condition of muscular relaxation as possible.

Equally important with rest is the dietetic management. The diet should be largely nitrogenous, and, in order to promote its digestion and assimilation, sugar and sugar-producing articles should be used in the smallest possible amounts. Beef, mutton and eggs should furnish the basis of the dietary, with milk when it agrees; and if sugar is cut off these foods are more perfectly elaborated. The predigested foods are of great benefit, special preference being given to malted milk and somatose, a teaspoonful of the latter being ordered with a cupful of the malted milk, and this in the absolute-rest cases may be given every two hours; in the partial-rest, cases between each meal and at bed-time.

Coffee and tea are beneficial in many cases, excepting those who have the excessive use of these articles as a part of their etiology. Excessive use of either of them aids in prolonging and promoting neurasthenia, but in moderation they are both conservative to the general nutrition.

Electricity is the third indication. In the absolute-rest cases general faradism is necessary, and in the beginning of the treatment it should

* From Sajou's Cyclopædia.

be very gently applied and to the extremities only ; later, to the whole body, using currents that can just be felt. The bed cases should also receive galvanism, first to the head, using a descending current with large electrodes of from 1 to 3 milliampères ; then to the cervical sympathetic, using from 3 to 5 milliampères, and then to the spine and abdominal sympathetic, with a large negative electrode at the epigastrium and a smaller one over the spine and a current of from 5 to 10 milliampères. These séances should be given daily.

The partial-rest cases who come to the office should have static electricity. It may be used by insulation with the primary current, and by sparks from the spine and abdomen with the secondary current for fifteen or twenty minutes daily.

Hydrotherapy is the fourth indication. Sponge-baths are a necessary part of the Weir Mitchell treatment, but in addition they should have the wet pack daily, beginning with a temperature of about 70° F., and gradually lowering to 50° F., prolonged for about one hour.

For the partial-rest cases the dripping sheet is used, the water being about 70° F., and the friction with the sheet made vigorous, the whole rapidly done. The shower-bath, beginning with moderately warm water and gradually cooling it, is of much service in many cases. The hot air bath, like the wet pack, will promote elimination and often overcome insomnia. Cabinets for this purpose are now readily accessible at a reasonable price.

Massage is the next indication, and is required in all the absolute-rest cases. It should be given by the nurse. It should be given very gently in the beginning, the movement being limited to the gentle and superficial ones, and little by little the force, vigor and extent of the treatments should be increased. The partial-rest cases sometimes need massage and sometimes do not. If the effect of the massage is sedative, it will do good ; if, on the contrary, it is exciting or irritating, it may do harm. As the case progresses toward recovery, physical exercise becomes necessary. The Swedish movements may be added to the massage ; light calisthenics may be provided, and such out-door exercises as golfing. This is one of the very best out-door exercises of to-day for the convalescent cases, and indeed, for many of the mild cases from the beginning. The reasonable use of the bicycle is of much use to many. Horseback-riding is a very valuable out-door exercise. Change of scene is often of advantage, but much travelling is injurious.

The climate selected should be one with a moderate mountain elevation, 1500 to 2000 feet, and one not too dry. Ideal places are to be found in the Allegheny Mountains, especially in the mountains of North Carolina—the country round about Asheville, and even better, the country north of Asheville, with Linville as its centre.

The sanitarium, for a short time, is a good place for some patients.

In the drug treatment of neurasthenia the first important class is those which promote elimination. The aloetic laxatives most frequently used are the Lady Webster dinner-pill, or the pill of aloin, strychnine, ipecacuanha, and belladonna. Occasionally a calomel purge is beneficial. Many of these cases require colonic flushings with the normal saline

solution administered in the knee-breast position. Such flushings may be administered in the majority of the constipation cases once or twice a week. Renal deficiency very often demands diuretics, of which the effervescent potassium citrate is the most efficient. All neurasthenics are greatly benefitted by the imbibation of a large amount of water.

For the nervousness the bromides are invaluable, sodium bromide being preferred, especially when combined with the fluid extract of *adonis vernalis*, in from 1- to 5-minim doses. Hypnotics are rarely to be administered. The bromides during the day, the hot-air bath or the hot pack at night, with some easily digestible food at night will almost invariably secure all the sleep that is necessary. Blaud's mass, combined with small doses of the extract of *nux vomica* and arsenous acid, makes the best hæmatinic combination. Cases that are not improved often require alteratives in addition, and the chloride of gold and sodium, combined with the pulverized resin *guaiaci*, a combination that prevents the decomposition of the gold salt, given before meals, a half or three quarters of an hour, is the best alterative combination in personal experience. Occasionally small doses of corrosive chloride of mercury answers next in preference as an alterative. Phosphorus, as the zinc phosphide, or the syrup of the hypophosphites (U.S.P.), is of service in some cases, and the animal extracts containing phosphorus in a readily assimilable form may be used with advantage. The mineral acids in some of the dyspeptic cases, for temporary use, are of service. Quinine, unless there be a malarial element present, and strychnine increase the nervousness and do not benefit, except in exceptional cases, general nutrition.

No matter what special line of treatment may be adopted, it is very important to keep the patient busy in his efforts at cure, and a daily schedule of therapeutic work should be furnished to him.

F. Savary Pearce says it is in dealing with convalescents from neurasthenia, with incipient cases, or with those in danger of a recurrence, that the climatology of neurasthenia is especially important.

It is almost axiomatic that an altitude of over 2,000 feet is unsuitable for the neurasthenically-disposed or convalescent patient. A very "stimulating" climate should be avoided. Other conditions to be avoided are as follows: Districts menaced by high winds, and frequent fogs; cloudy, saturated atmospheres with but slight movements of air-currents; low country (sea-level) with continuous, non-varying, although moderate, heat, as where the effect of the gulf-stream is strongly felt. Thus the Bermuda Islands and Florida are enervating localities.

Ideal conditions for the neurasthenic include sea-air in a well-wooded country, far enough from the coast to avoid its fogs. A sea-voyage is, as a rule, an excellent preliminary to other climatic measures. Provided the voyage is not stormy, it acts both psychically and physically in soothing the nervous system.

In order to obtain the full benefit of correct climatic conditions the patient must have good food. Without this important adjunct the desirable climatic change may be entirely defeated in its effect on the patient.

MEDICAL ASPECTS OF CANCER OF THE BREAST.*

BY WILLIAM OSLER, M. D., BALTIMORE, MD.,

Professor of medicine in Johns Hopkins University, and Physician-in-Chief to the Johns Hopkins Hospital, etc.

Surgery has become largely the practice of medicine, and medicine, in part, at least, the preliminary practice of surgery, in so far as making the diagnosis for surgeons and handing them our cases for operation. We consulting physicians see a cancer of the breast in two stages, because the patients come to us as the lesser of two evils; they prefer the opinion of the physician who may possibly tell them that an operation is not necessary, to that of the surgeon, whom they fear will surely tell them that an operation is necessary. I see every year three or four cases of cancer of the breast in its early stage, or cases of suspected breast tumor. But the cases to which I wish to call attention this evening form a more important group for the physician to recognize—namely, the *late manifestation of cancer of the breast*.

Now, they may be grouped according to the metastases, for it is through these that we are brought into relations with them, into *cerebro-spinal, thoracic and abdominal groups*,

We will first consider the *cerebro-spinal group*. Owing to the fact that the metastases are almost as frequent in the bones as in any other part of the body, we see a proportionately large number of cases with symptoms pointing either to disease in the cranium, the spinal canal or the vertebræ. That point has not been sufficiently brought out, certainly not by medical writers. Statistics are available now from several of the large German clinics, and the percentage is considerable.

The first case that called my attention to the matter was a remarkable one that illustrates the *cerebral form of metastasis* following breast cancer. Many years ago I was asked to see a case with Dr. Agnew, in Philadelphia. The woman suffered with headache, vomiting, and progressive coma. She had a double optic neuritis, and it was quite evident that she had a brain tumor. It was not until I saw her the second time that Dr. Agnew remarked: "Why, I forgot altogether that Mrs. R. had cancer of the breast eighteen years ago." On examination, there was a hard, firm, scirrhus nodule in the breast. That case is paralleled by many in the literature, and illustrates, too, the fact that often years after a malignant disease has apparently atrophied a secondary growth may occur. It is the only case, however, out of quite a long series I have had, showing pronounced cerebral symptoms.

The *spinal group* is very much more important, and really forms a very considerable number of all the cases of late metastases in carcinoma of the breast. They are important, in the first place, because they are very apt, indeed, to be mistaken for something else. The metastases may occur in the body of the spine or within the spinal membranes; and a very small new growth, as in a case recently seen in the Hopkins, may cause very serious symptoms. I saw a very remarkable case a few years ago with Dr. Pole which interested me extremely, as we had made an error in the diagnosis. The patient had a marked neuralgia of the neck

* From *The Virginia Medical Semi-Monthly*.

and arm and held her head in a peculiar position, always a little obliquely. On the first visit, I did not recognize the condition, but thought it an ordinary cerebro-brachial neuralgia. On the second visit I examined both breasts, and found a well marked scirrhus tumor in the left one.

But the cases that are of most interest for the physician are those described by Charcot, under the name of *paraplegia dolorosa*—an excellent name. The onset of these spinal symptoms may be early, within a few months after detection of the cancer, or may be delayed for months or years; or, on the other hand, they may occur long before the tumor is recognized. The patient and the physician may not know of the existence of the tumors. An instance of that kind occurred at the Johns Hopkins Hospital in 1894, when a man was brought into Ward C from Union Station, having become completely paraplegic on his way up from Florida. He had had curious symptoms of numbness in the hands and feet, accompanied by burning pains, and his physician, who lived in Massachusetts, had been sent for to bring him home. By the time he had reached Baltimore he had become so ill that it was decided to bring him to the hospital. He was stripped for examination, and as he stood up it was quite evident that one breast was very much larger than the other. The patient himself had never noticed this, but palpation showed a firm, hard, indurated tumor.

With the existence of the primary tumor of the breast the painful progressive paraplegia was easily and readily explained. The difficulty in these cases arises from the fact that weeks and months often intervene between the onset of the pain and the development of the paraplegia, and that pain, and pain alone, is the feature presented by the case for many months.

Dr. Thayer may tell us of a case of that kind which he saw last year. Two years, I think, following operation on the breast the patient began to have these pains. She was a nervous, hysterical individual, and these pains were regarded for a time, at any rate, as probably functional, and due to her neurotic condition. I saw her first with Dr. Atkinson, and it was not possible then to say what was the trouble. There were no signs of local recurrences, although the conditions was suggestive. Three weeks ago, when I saw her again with Dr. Atkinson, she had the well characterized features of *paraplegia dolorosa*. These cases are exceedingly trying, because one is in doubt whether he has to deal simply with pains of a neurasthenic patient, and dreads to give morphia; yet the pains become progressively worse, and he has to give morphia ultimately in large doses while he has the feeling, as I have had in some cases, that the patient should have had the morphia, and plenty of it, very much earlier.

The early symptoms usually are not associated with a scar. They are usually distinct pains, a feeling tingling and numbness, neuralgia of great intensity, and shooting pains down the front or back of the legs, then a slight paraplegia followed by complete paraplegia; but long before this last you have the characteristic retraction of the legs, associated with severe pain. The degree of suffering is probably as great as that seen in any other condition in medical practice. Now, remember that all this may occur without the slightest sign of a secondary tumor.

A patient died in the Hopkins a few months ago who had these agonizing pains with paraplegia, but no definite tumor, no kyphosis, and as a rule, you find no evidence of tumor masses in the spinal column, but must except as the signs of tumor—rather the signs of pressure upon the nerve roots as they emerge from the spinal cord. In the case referred to it was found at autopsy that the tumor growing from the membranes and pressing upon the cord was no larger than a walnut.

The spinal list is the longest of the cases I have seen, and in scarcely one of my long series was the condition recognized in the early stage. What I wish to emphasize particularly about these cases is that they are, so far as we know, utterly hopeless cases; and just as you can reach a diagnosis, give the patient all the comfort and aid that medicine can offer, and you need not blame yourselves for making them morphine habitues. It gives them relief for a time, but you cannot cure them.

The thoracic group is next in importance, and naturally owing to the close relation and the liability to involvement of the lymphatics, that group of cases is fairly numerous. Metastases may occur in the pleura, in the mediastinum or in the lungs. Cases in the pleura are common. There is usually an invasion of the pleural membrane, and effusion. The patient comes with symptoms of pleural exudate requiring tapping, and you may be surprised to find a bloody fluid and the necessity for tapping. These patients may die with little or no distress other than that associated with dyspnoea. The pulmonary cases are exceedingly rare. I have seen autopsies showing such things, but do not remember at the moment a clinical case of the kind. Involvement of the mediastinal gland is, next to that of the spine, the condition with perhaps the greatest degree of distress; and when a year or a few months following the removal of a breast cancer the patient begins to have a cough or dyspnoea without signs of effusion in either pleura, then you know, even if the glands above the clavicle are not enlarged, that one of the worst accidents has happened. Those cases, as a rule, are very, very distressing, and die of suffocation. There is increasing pain, dyspnoea and pulmonary oedema, and fortunately the duration of the illness is shorter than in the spinal cases.

The abdominal group comes next; and first in that we have the *hepatic* cases. Metastases of the liver are perhaps the most common if you take into consideration a large series of cases. Large nodule masses can usually be felt or seen, and death is rapid without much pain.

I want, in conclusion, to draw attention to a very remarkable circumstance in connection with the secondary tumors following breast cancer. You know it occasionally happens, as in the case of Dr. Agnew's, which I mentioned, that the tumor of the breast ceases to grow, the fibrous tissue predominates, and the growth becomes a firm, hard, cancerous, mass, shrinking to perhaps a third of its original size. It is one of the special characteristics of a scirrhous tumor that it not only tends to increase, but that it tends to heal to a certain measure just as tuberculosis does. If you look at the central portion of a nodule of the liver, it is firm, hard, and has undergone changes that are really conservative, and on the road to a healing. In a few of these instances of a secondary growth, one sees remarkable changes that are almost curative; at any rate, they proceed to such a degree that the tumors themselves disappear,

and what is more important, the symptoms they cause disappear and the patient, who was in an apparently hopeless condition, recovers; he gets up, and our grave prognosis was apparently a false one. A number of such cases are on record, and if you should look through both volumes of the *Index Catalogue of the Surgeon General's Library*, you will find some interesting reading on this subject. A few cases are given there in which the secondary tumors have disappeared entirely.

Two cases of interest in this line have come under my observation. Four years ago last September, a young woman came from Pennsylvania to consult me about a lump in her breast. I sent her to Dr. Halsted, who in November removed a very large tumor, which had already involved the axilla in the right arm so that part of the vein had to be removed. It was an extensive growth, and there was no doubt about its cancerous nature. She did very well, and was soon able to be about, although Dr. Halsted had given a very unfavorable prognosis. Two years ago she came to me again complaining of pain in the side and a loss of vision in one eye. I was sick at the time, and unable to examine her carefully, and as her father was then under the care of Dr. DeSchweinitz for a diabetic cataract, I asked her to see him. The Doctor sent word back by special delivery letter that the patient had a sarcoma of the choroid. He did not know about the breast tumor that had been removed, but said that "it is a secondary growth, of course, in the choroid, the first I have ever seen, and the twenty-second on record." All that winter she seemed to get worse, and in June, before I went away for my vacation, I went up to see her, and bid her good-bye. She was then in a very bad condition with secondary tumors in the other breast, nodules in the liver, loss of power in the legs, and was suffering a very great deal of pain. She was given considerable morphia, and during the fall began to improve, so that to my astonishment when I returned I found her not only alive, but rapidly improving, and she has continued to improve. A year later the tumor nodule in the breast had disappeared; and she had regained the power of walking, and what seems more remarkable, she was regaining vision in the affected eye. I see Dr. Randolph shaking his head, and I know it is wonderful, but it is not the only remarkable thing in this case. She still has some pain in walking and has a slight kyphosis about the fourth dorsal, and though she still has to take a great deal of morphia, she gets about, and recently drove two miles to the station to meet me.

Now, a still more remarkable case you may see walking about Baltimore to-day. It must be about four years ago that a young woman came to me with a tumor of the breast, and I sent her to Dr. Tiffany, who removed the cancer. About this time last year she began to have the girdle pains, pains down the legs, and became completely paraplegic. Dr. Lockwood and Dr. Tiffany for a time expected her death any day or hour, but she gradually improved, went to the country, and about four months ago she walked from Union Station to my office. She has some secondary nodules, a stiff back, and has to take a certain amount of morphia, but she is able to be about and attend card parties and other entertainments for her enjoyment.

Now, those are cases for which you could not do better with treatment by Christian Science or at St. Ann's our Lourdes.

DIAGNOSIS AND TREATMENT OF INTUSSUSCEPTION.*

Charles P. B. Clubbe (*The British Med. Jour.*) speaks of the importance of an early diagnosis in these cases in children. During the last seven years, out of 49 children treated for this complication, 45 were operated upon, of whom 21 died. In the successful cases the delay between the onset of the trouble and the time of operation averaged only twenty-four hours; while in the fatal cases the average time was fifty-six hours. In the four cases not operated upon the intussusception was reduced by injections alone. This simple procedure is always useful and safe, and should be tried first, no matter in what stage the case is seen. From ten ounces to a pint of warm water and oil should be injected, the child being anæsthetized and the hips well elevated. After the fluid has escaped, if examination shows that the sausage-shaped tumor has vanished, the child should be put to bed and a minute dose of morphine given. Careful examination should be made every six hours for forty-eight hours to guard against a return of the trouble. Neglect of this precaution has led many to underestimate the value of this mode of treatment. Even if complete reduction is not accomplished by the injection it often reduces the mass somewhat and renders subsequent operation easier. In cases, however, where the surroundings are such as to render an operation inadvisable even if found necessary, no time should be wasted in preliminary injections at the home.

Diagnosis.—In a large number of cases there is a history of sudden screaming, pallor and vomiting, followed from two to ten hours later by the passage of blood and slime. In the interval between the first attack of pain and the bloody movement the child may have been comparatively quiet, or have had several short attacks of pain and crying. The pulse rate and temperature are not far from normal. With such a history careful examination of the abdomen is demanded, and where the muscles are held rigid a little chloroform should be given. Examination by rectum is rarely useful or necessary. In the early stage nothing can be learned in that way, and later on it is unnecessary, as the tumor can be felt through the abdomen. A word of warning as to cases where the intussusception has descended into the rectum or even out through the anus should be given. Such cases have been mistaken for prolapse of the bowel. Children suffering from diarrhœa may have this complication, and the passage of blood-stained movements may have occurred before the intussusception, leading to the intussusception, when it occurs, being mistaken for an exacerbation of the enteritis. Such cases result fatally, without any recognition of the true state of affairs.

In some cases these signs are all absent, and there is merely restlessness, distention of the bowel, vomiting now and then and possibly slight looseness of the bowels. After twenty-four hours, if the intussusception is at all severe, there will be grave symptoms of obstruction.

* From *Amer. Gyn. & Obstet. Journal.*

Before operation strychnine and morphine should be given hypodermically. A large hot water bag should be placed on the table under the child. When the mass is small and in the ascending colon the incision may be made at the right of the rectus muscle, otherwise in the median line. The peritonæum in babies is so fine that it is well sometimes to hook an aneurism needle into the first small opening and pull the peritonæum forwards. When the mass is reached find out which is the lower part, then begin gently squeezing the intussusciptions. Just at the last an assistant may assist by gentle traction on the bowel just above where it enters. The intussusception may sometimes be partly reduced while still in the abdomen, but the last part of the bowel that has to be uncoiled must always be brought into view. In cases that have been reduced easily there is sometimes thickening and a small cup-shaped depression at the site of the apex of the intussusception. This must be carefully pressed out and made convex, to prevent recurrence.

When the squeezing begins to cause much cracking and tearing of the peritonæal coating, this method of procedure will have to be abandoned for resection. So also in the ileocæcal variety, where the appendix has been much pinched, or in cases where reduction is impossible, or where the bowel appears much damaged after reduction. End-to-end anastomosis with a continuous suture of fine catgut, putting in a double row, is the best way of uniting the several ends of intestine. After washing the intestines with warm salt solution replace in the abdomen. No matter how great the difficulty of replacement, never be tempted to puncture the intestine. The abdomen is best closed by through and through sutures with no drainage.

Babies must be fed within a few hours after the operation. Mellin's food, whey and water (one drachm to two ounces), or the white of an egg in four ounces of cold boiled water to which one drachm of somatose is added, may be given often in small quantities. After two days breast-fed babies may be nursed; others should be fed on carefully prepared foods. The child should be turned from side to side or carried about occasionally. Morphine in very small doses is usually needed during the first twenty-four hours. Strychnine and digitalin may be given hypodermically as indicated. If the bowels do not move in twenty-four hours a small dose of calomel may be given. The first movement usually occurs in twelve hours after operation and generally contains blood and mucus. The sutures should never be removed before the tenth day, and if they are giving no trouble they may be allowed to remain longer.

THE TOXAEMIA OF PREGNANCY.*

A careful and useful article, by S. Marx, M D., of New York (*Medical Record*, April 20th) calls attention to a condition which is neither generally recognised nor understood. By the toxæmia of pregnancy is meant a disturbance of the metabolism in which, simultaneously with chemical changes in the urine, there appear certain well-marked nervous symptoms, that, when not actively treated, inevitably give rise to eclamptic convulsions. Clinical experience teaches that the toxæmia of pregnancy, the pre-eclamptic state, and eclampsia are conditions closely allied, and intimately wedded in one way or other, to disturbances of renal secretion. Further, that the pure toxæmia of pregnancy is always associated with kidney inadequacy, so far as the absolute diminution of secreted solid elements is concerned, and that the surest method of treatment is followed by a return of diuresis with a hypersecretion of the offending retained products. The one organic product which, in all human probability, is the most dangerous one is the chief solid constituent of the urine, namely, urea, or its congener, nitrogen. Urea in its formed state is not a very poisonous element, for large amounts have been injected into animals without bad results. And yet when approximately the same amount as is estimated to be in the blood of a woman suffering from eclampsia, is injected into similar animals, death or convulsions are the result in a short time. He holds that urea or its synthetic nitrogen is the sheet anchor as regards the safety of the pregnant women, and upon its excretion, whether diminished or increased, depends the health, nay the very life of the gravid woman. It is, therefore, argued that in the typical cases of nephritis gravidarum it is not the amount of albumin that should be our index as to when to induce labour, but always the amount of urea excreted. The author quotes a very typical case:—

A primipara, whose past and present history was perfect up to the time of her fatal illness. She passed her seventh month of pregnancy without the slightest difficulty. The urine had been carefully examined by her husband, a physician, and another expert, and had always been normal in every respect. Just two days after the last examination she suddenly complained of a very severe headache. In eight hours, vomiting set in, which was persistent, and without apparent cause. The collected urine for twelve hours—about six ounces—showed neither albumen nor casts. A urea estimation showed a diminution down to one-fourth of one per cent. She was stupid and drowsy, the pulse was rapid and small. She soon began to twitch, and her condition began to be precarious. It was decided to induce labour at once. Fits occurred, Cæsarean section was advised and declined, and the patient died undelivered.

She had been ill hardly thirty-six hours, passing rapidly from perfect health to death in so short a time.

The author holds very strongly that eclampsia is as absolutely preventable as is puerperal sepsis. Nay, it is more so, since even among the

* From *Medical Times & Hospital Gazette*.

best and the most careful, sepsis will occasionally creep in. The great trouble with many observers is that such a condition never draws upon them, since they have been taught, and they themselves will teach, that the uræmic state is always associated with casts and albumin in large amounts. This reasoning and teaching are not only absolutely wrong but positively dangerous. Have we not all seen women go to term with positive evidence of grave nephritic disease, with little or no discomfort? And, on the other hand, it is well known that patients die without the slightest evidences of either albumin or casts in the urine.

As regards the symptoms, they are generally those of a systemic intoxication. Patients complain of a severe headache, which persists and increases in spite of all measures. It is not localised, but spreads all over the top of the head and down into the nape of the neck. There are nausea and vomiting, which may be so severe as to become almost uncontrollable. The presence of œdema is characteristic. It is erratic. At times the patient is bloated to a marked degree, and then in a few hours the œdema will have entirely disappeared. It is this peculiar fugitive symptom which is as typical as any, and characteristic of this condition. Convulsions are preceded for days by twitchings, which are limited to the face or to one or other of the extremities.

Treatment: Prophylactic measures include first the regular examination of the urine, not in a perfunctory fashion as to albumin and casts, but a methodical estimation, at weekly or semi-monthly intervals, for the amount of urea excreted in a given twenty-four hours. Such an estimation is as quickly made as an ordinary urinary examination. When there is a lessened secretion the patient suffers, and when hypersecretion occurs the patient is freed from symptoms indicative of toxæmia. Successfully to treat these patients there must be absolute rest in bed. Every emunctory must be stimulated by means of drugs having specific action on the various excretory channels—the bowels by calomel, jalap, elaterium, or the various salines, the skin by hot packs, sweatings, or the milder diaphoretics.

Diet: Milk, buttermilk, kumyss, matzoon. Water is given in large amounts to flush the kidneys; the preference being a mild saline or pure spring water. Of the greatest value are hot rectal injections, quarts at a time being given with the patient on her side, with the buttocks elevated. These act exceedingly well not only as a food, but as direct urinary stimulants.

INSANITY IN WOMEN FROM THE GYNECOLOGIC AND OBSTETRIC POINT OF VIEW.*

BY A. LAPHORN SMITH, B.A., M.D., M.B.C.S., ENG., Montreal.

In several of the writer's recent papers he has referred incidentally to the marked improvement which has taken place in the mental condition of many of his cases after gynecologic operations, and more especially after those which had been performed for the cure of retroversion of the uterus. Nor is the writer alone in making this observation. Schauta, of Vienna, has reported four cures and one case improved out of nine insane women on whom he operated for various abnormal conditions of the pelvic organs. Manton, of the Eastern Michigan Asylum, has reported many cases restored to sanity by gynecologic operations. Dr. Rohe, of the Maryland Hospital, has also recorded many cures after gynecologic operations in the insane. Dr. Bucke (*American Journal of Insanity*, July, 1898, No. 1, Vol. V.), reported 195 operations on 109 insane women, with the result that thirty-nine recovered from insanity; in thirty-two others the mental condition was improved; he says: "It is my opinion that very few of these cases would have recovered or greatly improved if they had not been operated upon. Some of them who did well must have very soon died had no operation been done." Some of these cases are worth noting, as they were cured. 1. Chronic mania 3½ years' duration, two cystic ovaries removed. 2. Chronic mania two years' standing, lacerated cervix repaired. 3. Chronic mania, over seven years' duration, cystic ovaries removed and lacerated cervix repaired. 4. Destructive mania for five years, both ovaries removed, one a multilocular cyst, the size of an orange the other ovary adherent and atrophied. 5. Three years insane, ovariectomy and ventrofixation. 6. Chronic mania sixteen years standing, ovaries enlarged and cystic, tubes adherent, removal of tubes and ovaries. 7. Delusional mania, five years standing, both ovaries removed, one a cyst of fifteen pounds. 8. Delusional insanity, two years standing, trachelorrhaphy.

Dr. Hobbs of the London, Ontario, Asylum, reports¹ that out of 173 women who were operated upon 73 recovered mentally, and forty-one were improved mentally. Dr. Hobbs points out that the number of insane married women in the asylums is nearly double the number of insane single women, which he attributes to the wrecking of the general health following the accidents and diseases that maternity entails, and the subsequent effect of those bodily ailments upon the mental condition. During five years he had 800 insane women under his care, and of these, 220 were examined by a gynecologist. 186 of these examined were found to have distinct, and in many cases serious lesions of the pelvic organs, there being 371 lesions in the 188 patients. Taking eight years in the history of the asylum, the introduction of gynecologic surgery as an

* Read before the Medical Chirurgical Society of Montreal. Published in *St. Louis Medical Review*.

adjunct of treatment has improved the percentage of recoveries from 33 per cent to 51 per cent on the admissions.

Dr. Ernest Hall, of Victoria, British Columbia, states that he examined 75 cases of insanity in women and found some tangible pelvic disease present in 72. Thirty-eight of these were operated upon with the result that there were six complete cures of insanity and seven partial cures. Engleman of Boston has reported a case of immediate cure of insanity by replacement of a retroverted uterus. Hack Tuke, the well known alienist, and McNaughton Jones, the author of the latest and one of the best text-books on gynecology, reports a case (*Edinburg Medical Journal*, October, 1900), of acute melancholia in a young girl in whom there had been for some time premonitory symptoms of insanity. Within a few weeks, he says, the patient was well enough to return home after simple rectification of the displaced uterus. He adds, "The depressing mental effect of retroversion of the uterus with the accompaniment of displacement of the ovaries is hardly recognized as generally as it should be." Prof. Japp Sinclair, who, you will remember, was chairman of the section on gynecology of the Montreal meeting of the British Medical Association, has recently recorded a case in which abdominal hysterectomy completely cured insanity in a woman with a bleeding myoma, who had been confined for some years in the Cheadle Royal Lunatic Asylum. A year later she was living at home and able to take care of her children and household just as well as before the symptoms first showed themselves. Dr. Rooke Ley of the Prestwick Asylum says that uterine displacements and tumors do undoubtedly cause and perpetuate mental disorders.

Dr. M. Madden says: "A large proportion of cases of mental disease in female patients is due either to disordered menstruation with tubal and ovarian irritation or to puerperal causes, for by the direct removal of these causes I have been able to restore the mental and physical health of patients formerly confined in asylums."

If time permitted I could quote from such well known authors as Clouston, Claye Shaw, Hack Tuke, Hyslop, Savage, Bevan Lewis and Mary Dixon Jones in support of my contention that pelvic conditions are important factors in the production of mental diseases; but surely these are sufficient. Let me then go on to point out in what manner this result is brought about. Before doing this, however, I must do what I can to refute that terrible error which has taken such an almost ineradicable hold of the minds of so many alienists, namely, that insanity is nearly always an hereditary disease. I feel convinced that a child born of the cleverest and most intellectual parents may become insane if improperly fed and if badly brought up, while a child born of weak-minded parents, or even insane ones, may grow up to be an intellectual giant if transplanted soon after birth to a highly intellectual environment, and if properly fed. Idiots and those having organic disease of the brain, are not referred to at all in this paper. As for the brains of the insane, the writer maintains that our brains are just what we make them by exercising, cultivating, feeding, starving and poisoning them. If this can be proved a great deal of what has been copied from one text book into another for the last fifteen years will have to be abandoned, with the re-

sult that the treatment will be rendered much more simple and successful.

Taking any hundred women in any asylum at random, an unbiased investigation of the cause of their insanity will enable us to group probably ninety-five of them under one of two headings; first, those cases due to defective nutrition of the brain, and second, those caused by poisoning of the brain. Under the first category we must place those women whose brains are starved by reason of insufficient food or light or air; second, those whose blood cannot nourish the brain because of increased demands upon it such as lactation, pregnancy, insomnia or exhausting hemorrhages; third, those in whom the brain is starved, because some great mental impression so affects the sympathetic nerve as to take away the inclination for food and to prevent its digestion if eaten; and fourth, those whose brains are starved because some condition of the uterus or ovaries is pressing upon or otherwise irritating the pelvic branches of the sympathetic nerve; which irritation is expressed in the brain by contraction of the circular fibres of the arterioles; so that no matter how rich the blood may be, an insufficient supply of it is able to reach the brain cells. In the category of insanity from poisoning, we must include cases of autointoxication by ptomaines and from defective digestion and assimilation, whereby the proteids do not reach the ultimate stage of urea, but stop at the formation of creatin, creatinin, xanthin or uric acid; second, the case of defective secretion by the liver and kidneys so that poisons such as bile and urea accumulate in the blood and inundate the brain cells, instead of being removed as fast as they are produced; third, insanity after operations which, if not due to iodoform, should rather be called septic delirium from blood poisoning. We must now look a little more carefully into the bearing of each of these conditions as a factor in the causation of insanity.

STARVATION OF THE BRAIN DUE TO ANEMIA.

Every practitioner of twenty years experience can recall many cases, mostly in young women, in whom the brain failed to work correctly from this cause. One of the first cases of insanity that came under the writer's care was a young woman who became violently insane owing to a disappointment in love, and who had to be sent to the asylum. How did the brain become starved in this case? The process is easily explained; any all-absorbing passion or occupation takes away the appetite and even paralyzes the function of digestion. This young girl was so much in love that for nearly a year before she had no time or inclination for food, and her blood became anemic. When the disappointment came she absolutely refused to eat, and a few days later her brain had become so absolutely deprived of nourishment that reasoning came to a standstill. The writer has seen many cases of this kind since then in varying degree and from different causes. At one time it has been a woman with uncontrollable vomiting of pregnancy, who becomes more and more anemic from starvation until the mind has wandered. Another time it has been a wife so plunged into grief by the death of her husband that she could not eat. The insanity is only temporary in all these cases for, as soon as food is

supplied and is digested, the brain rapidly recovers its normal functions. Under this heading may be classed seven or eight cases of puerperal insanity coming on during the last months of pregnancy and lasting for a month or two after delivery, in which there was no anemia. These patients might all be saved this affliction if we took a little more care in watching our pregnant cases, and when we see that the growing fetus is using up more material than the mother can produce in the ordinary way, we should supply artificially, in the form of iron and phosphoric acid or hypophosphites, the brain food which the child is depriving her. By this means all these cases that I have had have recovered their reason within, at the latest two months after delivery. Several of them continued nursing, but an abundant supply of hypophosphites and suitable food was given them in order to supply this loss. There are many other women who, though not insane, are suffering from marked mental debility due to anemia, the starting point of which was a lacerated cervix, which by reflex action so interfered with the digestion that the quality of the blood ran down until the brain was quite unable to think or to reason.

In these cases, as perhaps in all cases of brain anemia, the memory is the first function to suffer. Within a few months after the repair of the laceration the digestion improves so much that not only is the brain well nourished but more food is assimilated than can be used up and the patient stores up fat and gains weight. The importance of sunlight and fresh air is well known, but its bearing upon insanity is, perhaps, not so well understood. And yet we may safely say that the brightest and happiest women would eventually become melancholic and even insane, if she were kept in a room from which every ray of sunlight has been excluded. The superintendent of a large and successful sanitarium states that patients who are despondent almost to the verge of committing suicide, show the most remarkable improvement within a few days after being placed all day in the sun parlor. Many of the cases of mild insanity which are cured in sanitariums, principally by sunlight, fresh air and nourishing food, would probably have otherwise found their way to the asylums. From what has been said it is easy to understand why so many cases of recovery of the brain have been reported after removal of a bleeding myomatous uterus. It also explains why Hobbs, of the London, Ontario, Asylum, found curetting necessary in 131 women out of 173 operated on. The writer is unable to state how many women in the three large asylums in the Province of Quebec, aggregating 1353 women, are suffering from menorrhagia or metrorrhagia, but if there are any if there is even one, that one should be curetted. There is no reason why a woman in the asylum should be deprived of the same modern treatment which her sister, even if poor, can readily obtain outside of the asylum, more especially if there is any possibility or probability that gynecologic treatment might restore her brain to health.

It is interesting to note that the insanity of women at the menopause is attributed by Dana to starvation of the brain cells, owing to senile degeneration of the arterioles, which diminishes their calibre, and consequently allows less blood to pass through them. If such were always the case, little, of course, could be done for these patients; but it bears

upon our subject to remark that Skene, who has given this subject much attention, states that in his experience the insanity was due to overwork, child bearing and lactation with insufficient food and sleep. How often do we find just such conditions among the farmers' wives, who attribute such a large contingent to the insane asylums? But now we come to cases of insanity due to starvation of the brain from temporary or spasmodic contraction of the blood vessels, set up by irritation of the great sympathetic nerve in the pelvis. These cases are much more common than is generally supposed. It would take more than the time allotted for a paper to report briefly all the cases which have occurred in the writer's own experience alone. Of the two hundred and fifty cases of retroversion for which he has performed either ventrofixation or shortening of the round ligaments, a large proportion, if not all, were suffering from brain symptoms. Many of them described it as a dull aching weight and like a cloud on the intellect. It is true that none of them were quite insane; if they had reached that stage they would have been sent to the asylum, and the writer would have had fewer operations for displacements to report. There are doubtless many of these cases in the asylum now, in whom the primary cause of the alienation would be found in the pelvis if they were examined by a competent gynecologist. A few months ago the writer performed ventrofixation at the Samaritan Hospital on a woman with a fixed and retroverted uterus; both she and her husband stated that she was gradually losing her reason, and their evidence was corroborated by that of several friends. She was afraid to go upstairs alone to her bedroom even in the day time, lest she should throw herself out of the window, and she could not trust herself with a knife in her hand even to peel potatoes, so great was the temptation to cut her throat. And yet her blood was in good condition; it was only a functional derangement of the circulation of the brain, for on the day following the operation she said that she felt that a load had been lifted off her brain and that the thought of suicide had completely disappeared. From being the most melancholic, she became the merriest patient in the ward.

INSANITY FROM POISONING OF THE BRAIN.

It will be convenient to subdivide the causes of the poisoning under four heads. 1. Poisoning from defective action of the kidneys. 2. From defective action of the liver and bowels. 3. From defective assimilation or combustion, so that chemical products are formed in large quantities which should only exist, if at all, in very small quantities. 4. From septic or other poisoning after operations.

Uremic poisoning leading to insanity. The presence of urea in the blood is a common cause of insanity among women, and of these cases the writer can recall several, some of whom had to go into the asylum. The worst case was in Longue Point Asylum for two years. She had uremic convulsions near the end of her first pregnancy, which was a twin one, as so many of these convulsion cases are. Her kidneys were tremendously damaged, as evidenced by the large quantity of albumin in her urine and the marked dropsy of the labia especially. After confinement she became violently insane and had to be sent to the asylum where,

however, after the lapse of two years, her kidneys gradually recovered so that her brain was no longer poisoned. Soon after her return home she became pregnant again, and almost immediately the kidneys began to fail in spite of every treatment. The writer reported the case to the Medical Society at the time with a view of obtaining an expression of opinion from the members in favor of the course which he wished to pursue, namely, to terminate the pregnancy immediately, before the brain had time to be seriously affected. But not one supporting opinion could be obtained; on the contrary, every one who spoke opposed it strongly and at that time, eighteen years ago, he did not dare to follow his inclination in the face of this adverse opinion. The patient was therefore abandoned to her fate under medical treatment and died in convulsions at the sixth month. Since then the writer has urged premature delivery or miscarriage as soon as the condition of the kidneys is known to be serious, and the opinion that this is the right thing to do is gaining in favor.

Insanity from defective action of the liver and bowels. For a variety of reasons, which every general practitioner is familiar with, women are especially liable to suffer from constipation. At the Montreal Dispensary hundreds of patients have come stating that their bowels were moved only once in six or ten days. As it has been proved that the colon bacilli increases in proportion to the square of the time that the fecal matter remains in the intestine, it is evident that such a woman would be infected with an enormous number of these bacteria. These give off ptomaines which enter the blood and are carried to the brain. And, if the ptomaines of the staphylococcus and streptococcus are able to cause a wild delirium in septicemia, why should the products of the intestinal bacteria not poison the brain to some extent. Moreover, the bile, which has such a depressing effect upon the brain when it accumulates to any extent in the blood, is also absorbed back into the circulation if it remains too long in the intestine. The very word melancholy expresses this condition. No wonder then that these women burst into tears before they can tell their complaint and that they are almost constantly in a condition bordering on insanity. Their intense despondency frequently leads them to commit suicide. The foul tongue and bad complexion point to the treatment; blue pill or calomel at night and a saline purgative next morning at once raises their spirits, which remain so until the bile and toxins accumulate again. Many of these cases end in the asylum, but instead of the insanity being the cause of the furred tongue and constipation it is, on the contrary, the furred tongue and the constipation, which, in the writer's opinion, is the cause of the insanity.

Poisoning from disordered digestive apparatus. Anderson (*Dominion Medical Monthly*, February, 1901, p. 55) says: "Even the most serious mental disorders may result in predisposed persons from intestinal auto-intoxication. Thus Berkely mentions a case where a woman aged forty became insane after an obstipation of six days duration, in which all the symptoms promptly disappeared on free action of the bowels being secured. It is unnecessary to multiply examples of the symptoms, varying in degree from trifling discomfort to well defined insanity, that may result from stercoremia." The writer has seen all degrees of this condition

from the one who had to go to the asylum to the office patient who bursts into tears on entering the consulting room without knowing why she is crying. All of these patients have a coated tongue and their bowels are generally constipated. They are generally very fat, and although they have a bad color, they do not appear to be anemic. On being questioned they will tell us that they feel utterly unhappy, their memory is defective and they think that their friends no longer care for them. They are not insane, but the difference between them and many of those who are in the asylum is only one of degree. On examining for pelvic disease this is rarely found. A course of cholagogue cathartics and the correction of their diet, so that the proportion between the intake and the expenditure may be made to more evenly balance, soon makes a marked difference in their mental condition. One patient, who did not know her husband and refused to recognize him, after a month of the above treatment completely regained her sanity, so that she was able to return home and take care of her house, although a month before she had to be fed by the nurse with a spoon.

Insanity after operations. Dr. McNaughton Jones, President of the British Gynecological Society, has made very thorough and exhaustive collective investigations as to whether gynecologic operations predispose to insanity. The conclusion almost unanimously expressed was that they did not. Schauta, of Vienna, said: "I never saw in a healthy woman any disturbance of mind after an operation." Martin, of Berlin, and Hegar say the same. Lawson Tait never had a case; Homans had only two in a thousand laparotomies, and Spencer Wells only had two in a thousand. Keith, of Edinburgh, had six in sixty-four hysterectomies, but it must be remembered that these occurred at a time when septic infection was much more common than it is now, and also that the method of performing hysterectomy was specially liable to be followed by sepsis, namely, strangulation of the uterus with the *serre-noeud*, leaving a sloughing stump. So that it is probable that these six cases of Keith's were either due to sepsis or to one of the antiseptics, namely, iodoform. The writer has therefore classed insanity after operations under the heading of brain poisoning either by sepsis or by antiseptics, chiefly iodoform. The writer's own experience of insanity after operation, and even it can not properly be called insanity, is limited to one case, which occurred ten years ago when the iodoform craze was at its height. Clamps were used instead of ligatures in the case, which was one of vaginal hysterectomy. After the clamps were applied and uterus removed, about 2 yards of iodoform gauze were passed between the clamps into the peritoneal cavity, partly for the purpose of keeping the intestines from coming down and partly to prevent microbes from going up. Within a few hours the patient became wildly delirious and while tossing about started a mild hemorrhage, which required plugging of the wound with another yard of iodoform gauze. The temperature rose to 106 and the patient died forty-seven hours after the operation. At the time, the delirium was thought to have been due to sepsis, but in the light of recent experience it was more probably a case of iodoform poisoning. For this and for other reasons the writer has not used an ounce of iodoform in ten years altogether

at the five hospitals with which he is connected. The writer wishes it to be distinctly understood that nowhere in the foregoing remarks does he advocate the removal of healthy ovaries for the cure of insanity. This has been done a number of times by many different operators, so that enough experience has now accumulated to make it evident that no such result can be hoped for as the cure of mental disease by removal of healthy ovaries. On the contrary, Howard Kelly has pointed out, and his experience has been that of many others, that the insanity in these cases is rendered much worse by the operation.

CONTAGIOUSNESS OF INSANITY.

In a former part of this paper a strong conviction was expressed that insanity was not hereditary; if it were so a much larger proportion of those now in the asylum would have had insane parents, not insane uncles and aunts or grandfathers, but insane parents. Moreover, it is not logical to say that everything which happens to a person is hereditary because it happened to his father or mother. It was also stated that in insanity, as in consumption, the idea that it was hereditary has been one of the greatest obstacles to treatment, so that instead of being one of the most amenable, it has come to be considered one of the most hopeless. If it is hereditary, people say, then it is bound to come no matter what they may do; therefore, why do anything? Believing that heredity was one of the factors which has least to do with it, the writer was pleased while preparing this paper to see by the report of Dr. Vallee, Superintendent of the Beauport Asylum, that he believes that many cases of insanity are contagious, not in the narrow sense of actual contact, but in the sense that one member of a family may by imitation of the insane actions of another member gradually become as insane as her. He mentions in detail a striking instance of this which had recently come under his notice. This observation, coming from such a source, is of great value; what misery has been entailed upon perfectly healthy people by the ever present spectre overshadowing their lives, that their mother or their aunt or their grandfather was insane. This heredity of insanity has been so much abused in making statistics that on this point they are quite unreliable. For instance, the son of a clever man marries, has a large family, quarrels with his wife, leaves her, contracts syphilis, gets a gumatous tumour on the brain and goes to the asylum. His daughter marries and has uremic convulsions with her first child and also becomes insane. Evidently these two cases of insanity have absolutely nothing to do with each other, and yet she would probably be classed as hereditary because her father was insane. The same thing applies to alcoholic insanity, which is generally supposed to be hereditary; and yet the writer knows of several families where the father was a confirmed drunkard long before the children were born, and yet not one of those children care for alcohol; on the contrary, they loathe it. These children were for the most part educated away from home. In another family where the five sons were all brought up with the constant example of a drinking father before them, four have learned to drink. It is well known that many respectable men have been taught to be drunkards by the example of bad company; but if the contagiousness of drunkenness were better

realized by the family adviser, many a family might be saved from this disease, either by isolating the drunkard, or by sending the children away when practicable.

From the careful consideration of a large number of recent articles by writers of great knowledge of this subject, added to the writer's own somewhat limited experience, he feels justified in coming to the following conclusions :

1. Insanity is not hereditary, as is generally supposed, but it is sometimes contagious.

2. Insanity, in the majority of cases, is not due to organic disease of the brain, but to functional disorders of its circulation and of its circulating fluid.

3. In many cases in women the disorder of the brain's circulation is caused by reflex irritation, carried by the sympathetic from the pelvic organs and caused by retroversion of the uterus, cirrhotic ovaries, fibroid tumors, etc.

4. In many cases it is the fluid circulating in the brain which is at fault ; in some it is too poor in quality because the digestive apparatus is interfered with by reflex irritation of the sympathetic, due to a lacerated cervix, endometritis, etc.

5. In a lesser number of cases the brain is prevented from working because the blood is badly oxygenated or loaded with uric acid, urea, or other poisons.

6. Hundreds of cases are now on record of insanity being cured by removal of the cause ; the greatest number of mental cures having followed ventrofixation and the shortening of the round ligaments, for the removal of retrodisplacements, while many others have followed the ablation of fibroids, cirrhotic ovaries, the repair of lacerated cervices and even curetting.

7. Such being the case it is the duty of the family physician to examine carefully every woman in his practice who becomes insane, or to have her examined by a gynecologist, and if any pelvic disease is discovered it should be remedied.

8. It is the duty of every medical superintendent of an insane asylum to have a systematic examination made, preferably under anesthesia, so that unsuspected sources of irritation of the sympathetic situated in the pelvis may be removed. In one asylum alone this course has resulted in improvement in 66 per cent., and recovery mentally of 42 per cent. of those operated upon, although the pelvic troubles had existed for from six to sixteen years.

9. If anything is done it must be done thoroughly, as several cases have been reported where no benefit resulted until a second and more complete operation was performed.

10. In view of the number of women who become insane from uremia, more care should be exercised by practitioners in preventing this condition. All Protestant physicians should, with the advice and approval of one or two colleagues, empty the uterus before the kidneys become permanently damaged. (Catholic physicians are not allowed by their church to sacrifice the ovum in order to save the mother.)

THE TREATMENT OF TUBERCULOSIS OF THE LARYNX.*

PROF. BEAMAN DOUGLAS AND DR. J. D. MACPHERSON,

By DR. JOHN SENDZIAK, WARSAW, POLAND.

The author gives a very lucid history of the development of the treatment of phthisis of the larynx from its incipiency in the first century to the present time.

Direct treatment only began with the discovery of the laryngoscope in the year 1858. Since that time the strides made in treatment have been marked.

Following the discovery of the laryngoscope came to the introduction of the use of cocain by Jellinek in 1884.

Up to the year 1887 tuberculosis of the larynx was thought to be incurable, but since then cases of recovery have been noted.

The author divides the treatment of laryngeal tuberculosis into general and local.

The local treatment he subdivides into asurgical (endolaryngeal) and surgical (external).

The local therapeutic remedies are divided into mild, active and palliative.

"The milder remedies are used in the initial stages of laryngeal tuberculosis as, for instance, in cases of catarrh, limited, it may be, to the posterior wall of the larynx or to one vocal cord (chorditis unilateralis), which, as is known, is characteristic of the disease. These milder remedies are also useful in the later stages, with extensive ulcerations and infiltrations of the larynx, when the general condition, as well as that of the lungs, contraindicates the more drastic local applications."

As milder remedies resorcin and alumen are mentioned as astringent, powers, and Ems water, menthol and balsamum peruvianum in the form of inhalations.

In every advanced conditions antiseptic drugs are especially indicated, both in the form of insufflation and inhalation.

Of the many drugs used, orthoform is particularly good, on account of its antiseptic analgesic action.

In the very advanced cases, where temporary relief is the only thing desired, the author recommends the use of cocain, eucain or morphin. Both cocain and eucain may be used in the form of a powder or in solution. The solution may be raised to the strength of 20 per cent.

Orthoform, for symptomatic treatment in advanced cases, not only has an antiseptic and analgesic action, but, according to the writer, seems to exert a favorable influence on the tuberculosis lesions. It is best

* *Journal of Laryngology, Rhinology and Othology.*

applied either in the form of a powder or in connection with menthol in an emulsion.

R. Orthoformi.....	12.00
Menthol.....	1.0-5.0
Ol. amygd. dulc.....	30.00
Vitelli ovarum.....	25.00
Aq. dest. q. s. ad.....	100.00

Fiat emulsio.

Sig: Apply locally with brush.

Of the more drastic remedies used, lactic acid, which has stood the test of trial, seems to be *par excellence*. According to the author, it should be used rationally and in suitable cases. It is best to begin with a 50 per cent. solution and rapidly work up to the pure acid. It should be thoroughly rubbed into the diseased part and sufficient time allowed for the eschar to fall off before making a second application. Phenolum sulphuricum applied with a brush, in 20-40 per cent. solution, work well in cases where there is not too extensive alceration. Many other drastic remedies are noted, but the above named have stood the test of experience.

The writer lays particular stress on general treatment. It is essential in all cases, and should be tried at the beginning, together with the local measures.—*The Post graduate*.

BILL NYE IN A HOSPITAL.

I have just been sent to the hospital for twenty days. My physician did it. He did it with an analysis. Anybody who amounts to anything nowadays gets analyzed . . . I like it here very much.

Sunday, 3 p.m. An analysis to-day shows more casts, fibrin, gelatin, and some zinc and copper. The chemist also discovers that in 1853 I fell from an apple tree and tore my panties in two places. . . .

Monday, 4 p.m. Temperature two-fifths of one degree above normal. Pulse regular, but sluggish. Have got all my business arranged, even to terms for shipment home.

Another chemical and microscopical analysis made yesterday of sputum, showing traces of nicotine and other poisons. Adieu, kind friends, I'm going home. A sweet young novice, who is training for a nurse, took my pulse this A. M. Took quite a while to find it, but I did not murmur or repine. I am trying to learn to love everybody, for to that bourne to which my chemist says I am going I should carry with me no enmities, no animosities. . . .

The life here at the hospital is delightful, and while I am fading away it is a joy to have loving hands bathing my little footies and manuring my knobby brow. . . .

Good-bye, wicked world! After December you will have to pay your own taxes, so the chemist says, for traces of one lung, also floating island and ice cream, were found in this last analysis. Do not mourn for me, kind friends, and choke and sob and make yourselves sick. It will

be vain. Just live as I have done, so that you may come where I am at. Live upright lives and run the lawn mower about every ten days over my humble grave during the summer. That is all you can do. Weep not. In me you have lost a man who can never be replaced, but never mind—the world will have to dray on somehow. I couldn't be here all the time. Anybody with a particle of sense must have seen that I couldn't live forever.

P.S.—While penning the above words a messenger boy has come swiftly in with a note from the chemist. He says in his note: "We regret that an error was made in your case by our assistant, who, in the rush of business here at the college, has got your analysis somewhat confused with that of the justly celebrated race horse, Nancy Hanks. We unfortunately got the sputa mixed. On going over your case again we find that, whereas, there are signs of glanders in the Hanks' analysis, you are, as a matter of fact, almost too healthy."

So to-day I leave my kind little nurses in their neat attire. Good-bye, girls, I'm going home where they know me. No one there will count my fevered pulse in the still watches of the night. No one there will put a nice hot-water bag, that feels like a Mexican hairless dog, at my feet.

Seriously, what a blessing it is, when we are weary of work and the gastric functions go on a sympathetic strike and the solar plexus goes away and sits down on a stone pile to weep over the situation, that one can go to one of these cosy corners, out of the current of whoop and hurrah, and eat raw steak and be sort of made much of.—*Exchange.*

LUPUS VULGARIS.*

BY JOHN EDWIN HAYS, M.D.

Professor of Dermatology, etc., in the Hospital College of Medicine, Louisville, Ky.

Statistics indicate that lupus vulgaris is comparatively a rare disease. It is one, however, to which much interest attaches, in view of its stubborn and rebellious nature, the great disfigurement which so often attends its progress, and in presenting features which disclose its identity as one of the forms of tuberculosis.

The essential etiological factor in lupus vulgaris is the tubercle bacillus. Friedlander was the first to demonstrate the presence of this organism, and to prove by crucial tests its tubercular character. Lupus vulgaris may therefore be defined as a chronic inflammatory disease of the skin, tubercular in its nature, and characterized by the development of small elevated nodules in the corium, which tend to enlarge, coalesce, and spread, usually proceeding to ulceration. Once started, this ulceration usually continues until horrible disfigurement results from tissue loss.

The disease may attack any part of the integument, but usually occurs on the uncovered portions, as the hands and face, especially the latter. The favorite point of attack on the face is the nose and the neigh-

*Read before the Louisville Medico-Chirurgical Society.

boring part of the cheek. The mucous membrane of the cheek, palate, pharynx, and larynx, may be attacked, but, as a rule, not primarily, this condition succeeding an involvement of the skin.

The distinctive lesion in a patch of lupus vulgaris is a small nodule. This lupus nodule is about the size of a pin's head, is brownish-red in color and somewhat soft in consistency, and, as Hutchinson first pointed out, resembles apple jelly in its appearance. The tubercle bacilli are imbedded in these little neoplastic growths. They are scanty in number, and frequently very difficult to find.

• As yet very little is positively known in what way the bacillus gains access to the corium. While it is very probable in the majority of cases that it enters through an abrasion in the epidermis, it may, however, be carried into the body through some of the natural channels, and be conveyed to the skin through the blood or lymph current.

The initial lesion is a single, or as a rule, several raddish-brown papules, which may occupy a level with the skin, depressed below or slightly elevated above it. These papules eventually coalesce to form a patch, which is soon converted into an ulcerating surface. The progress of the disease is very slow, and absence of pain one of its distinguishing features.

Lupus vulgaris is a disease of early life, the great majority of cases beginning before the age of twenty years. It is said to be met with more in the female sex. It is a disease which frequently leads to a very great destruction of tissue before its termination.

As regards prognosis, it may be stated that in many cases it is possible to check the disease, but, unfortunately, a recurrence is very likely to take place. When complications exist, as, for instance, the presence of tubercles in other organs, they must be taken into account in forecasting the issue of the disease.

In a large proportion of cases the diagnosis of lupus vulgaris presents no difficulty, the appearance of the lesions being amply sufficient to identify the nature of the trouble. In obscure cases, however, one must have recourse to a process of exclusion. The presence of the bacillus would, of course, be conclusive, but it must be admitted that its discovery, when present in the lesions, is not always easy, even to an expert.

Syphilis and epithelioma are the two conditions which most closely resemble lupus vulgaris. Syphilitic lesions may be eliminated by the history of the case, traces of disease elsewhere in the body, by a much more rapid destruction of tissue, and in otherwise doubtful cases by their behavior to antisyphilitic measures. Malignant growths occur later in life, run a more rapid course, are more painful and more likely to implicate the neighboring lymphatic glands.

It may be interesting to mention in this paper a case of lupus vulgaris which is now under my care. The patient is a young man, nineteen years of age, slender in form but possessing fairly good general health. The disease began in May, 1900. The integument of the upper lip a little to the left of the median line was first involved; then the disease slowly crept toward the nose. When he came to me last November the disease had gone beyond the lip, and had invaded the cartilaginous septum and the left ala.

The margin of the advancing disease showed the characteristic nodules of lupus. No hereditary history of tubercle was obtainable. The trouble had been slowly progressing since its commencement; the treatment up to this time had not been successful in arresting its march. He had been given large doses of iodid of potassium, under the supposition that he was suffering from syphilis.

Several remedies were employed locally in this case, but the treatment which did most good was an application of a paste of salicylic acid and creosote. In the course of a few weeks' treatment he was so nearly cured that I allowed him to return to his home in an adjoining State. The destructive process was apparently checked, except possibly at a small spot on left ala, the former ulcerating surface of lip and nose being replaced by smooth scar tissue.

He returned to me about one month ago, having had a slight recurrence in the nose and also an outbreak of the disease in the mouth, involving the hard palate and gums. The lesions are again disappearing under treatment, and I hope to complete the cure in a short time. The disfigurement of the nose which has resulted in this case differs very much from that which usually occurs when this organ is invaded by syphilis. The sunken-in appearance so characteristic of the deformity occasioned by syphilis, and caused by a destruction of the bony framework of the nose, is entirely wanting in this case.

The general or internal treatment of lupus vulgaris is that which is proper for all forms of tuberculosis, namely, the use of remedies with a view to improve the general bodily health. Local treatment, to be successful, must have for its purpose the entire removal of destruction of the tubercle bacilli found in the diseased areas. To accomplish this end the following methods are to be employed: Excision by the knife, the galvano- and thermo-cautery, and the various caustic pastes. It becomes a matter of interesting inquiry which of the well-recognized methods to choose in managing these cases. My own experience is too limited to pronounce any very decided opinion as to their comparative merits. It is my judgment, however, that if the method so selected is the one best adapted to the particular case, and is skillfully and judiciously carried out, the chances are very good for a successful result.

In a limited number of cases of lupus, satisfactory results have been obtained by the employment of the Röntgen rays; thin plates of lead are used to protect the healthy skin surrounding the patch. While pursuing this treatment accidents are liable to occur, such as a violent dermatitis, followed by extensive sloughing. I am strongly inclined to look upon these rays as an uncertain measure, productive of possible good and probable harm, and should only be employed by a careful operator in cases which have stubbornly resisted other less dangerous methods.

In some cases the improvement in lupus has been rapid and striking under the use of Koch's or Maragliano's serum, but very few complete cures have been reported from their use.—*The American Practitioner and News.*

NOTES ON THE USE OF ADRENALIN.

BY D. J. GIBB WISHART, B. A. M. D.,

Professor of Laryngology and Rhinology, Trinity Medical College, Toronto, Ont.

On the 13th of February last, Messers Parke Davis & Co. forwarded to me a sample of a solution of Adrenalin Chloride, one in 1000, the chloride being dissolved in normal salt solution containing 0.5 per cent. chlore-tone. I at once began to use it in my office practice and have made several hundred applications, chiefly to the mucous membrane of the nose but also to that of the middle ear, the conjunctival cul de sacs, naso-pharynx, pharynx and larynx, but have had no experience of its use as a heart tonic. A 10 per cent. dilution of the above solution, which is equivalent to one in 10,000 has been sufficient to contract the blood vessels in the membranes in a few seconds, and a repetition of the same or the use of a stronger dilution will bleach these membranes; this is especially marked in that of the nose where the membranes will become tightly drawn over the turbinal bones which show up white through it. In connection with operations about the nose it has proved itself highly useful in rendering them practically bloodless and for a sufficient time to allow of the completion of a sawing operation for the removal of a spur from the septum. Where however, the operation involved the sawing of the septum through close to its base, as in Gleason's operation, the bleeding was lessened only, and not prevented. In the removal of adenoids or enlarged tonsils, I have failed to observe an appreciable lessening of the hemorrhage, doubtless owing to the fact that the larger blood vessels were not reached by the drug. If however a tampon soaked in the solution was applied firmly to the bleeding base from which these growths had just been removed, the bleeding was controlled in a few seconds nor have I observed that it was likely to recur.

I have had occasion to use it in connection with two marked cases, which may be quoted:

Case (1) Mr. A. aged 26, referred to me by Dr. T.

The patient had been suffering for ten days with constant spitting of blood. The lungs were examined with negative results, but there was an insufficiency of long standing and a history of syphilis. Examination showed that the roof and walls of the naso-pharynx were studded with points from which the blood was oozing freshly, a few of these were also to be seen in the pharynx and in the laryngeal vestibule, while again in the larynx, and the trachea, as far as could be seen, a distance of about three inches, the lining membrane also was studded with bleeding points. The nasal and oral mucous membranes were free nor had there been any vomiting or purging of blood. The condition was diagnosed as due to the heart lesion. In this case the membranes were sprayed frequently with a solution of adrenalin, and the bleeding which was causing great anxiety to both the patient and his friends, disappeared in a few days.

Case (2) The second case was that in which an incision had been made through the anterior faucial pillar in a oblique direction backwards and outwards to a depth of one inch, with the length of about one inch and a half, in an endeavor to reach the seat of the pus in a case of quinsy. Here the hemorrhage was alarming, but the insertion of a tampon soaked in adrenalin solution and pressed firmly into the opening with the first and second fingers, for about five minutes served to check the bleeding.

The solution requires to be kept tightly corked or it will not remain sterile. When mixed in water in which a tablet of cocaine has been dissolved, the solution will turn presently to a pinkish red colour but the action of the drug is apparently not interfered with. Being an animal extract it is necessarily prone to decompose when in solution, but its introduction in a form of compressed tablets giving the strength of one in 10,000 when mixed with one ounce of water, will largely obviate this objection. It is now several years since I obtained a sample of Armour's powdered extract of suprarenal capsule and I have never since allowed my office to be without some one of the forms in which the extract of the gland has been prepared. All of these with the exception of suprarenal liquid with chlorotone, introduced about a year ago, by Messers Parke Davis, have been very prone to decompose, and in addition required straining and a very careful preparation to make the extract suitable in nasal surgery. The present form is infinitely superior to the previous preparation, and Dr. Takamine, to whose efforts and pains-taking investigations we owe the isolation of the active principle of the suprarenal gland, deserves all the credit which has been awarded him.

In March last, Dr. Takamine, addressing the New York Academy of Medicine, in the discussion of Dr. Mayer's papers on adrenalin made the following remarks—*inter alia* :—

" My substance is crystallized, and I think this is Nature's certificate, that it is a definite chemical composition and not the result of any arbitrary mixture—Nature's certificate in short that it is the active principal of the supra-renal gland. Its natural tendency moreover is always to resolve itself into a crystalline form. You take one form of crystal for instance, and dissolve it in hot water, and you find if you subsequently evaporate the water, that it resumes its crystalline form, just in the same way sugar does. Now I wish to conduct one or two experiments with the view to showing you some of the properties possessed by this substance. Here I have a solution of adrenalin, one in 10,000 in water. Into it I put a drop of ferric chloride—just a drop, observe, and in a few moments you will observe this colorless solution will change to a beautiful green. That is one characteristic change of the active principle.

Next we find that by the careful addition of alkali the green colour can be changed into a beautiful red, while by addition of a few drops of caustic soda to neutralize the alkali you can change the red color back into green—thus giving you both ends of the drug store. Now I will conduct another experiment to show you the strong power of the substance as a reducing agent. I again take a solution of 1 to 10,000, and into it I put a few drops solution of chloride of gold. Inside of five or ten minutes this colorless solution will gradually change first to a pinkish and

then to a purplish red, and in a few minutes more the solution of chloride of gold will be reduced to metallic form. This is another characteristic change which adrenalin produces. Now I wish to direct your attention to the diagrams on the wall which show the effect of adrenalin on the blood pressure. Its strength in this respect is shown by the fact that 1 c. c. of a chloride solution 1 to 100,000 intravenously injected has a striking effect. You will observe that within a few seconds the blood pressure rises, and then gradually comes down. The amount of adrenalin injected into a dog weighing 8 kilos was, 00001 gram, which is equivalent to .00000125 grams per kilo body weight, which shows a very wonderful amount of strength. Another demonstration is a very easy one. If you take a weak solution you will find that the conjunctiva of the eye can be blanched in a very few moments. I have tried how far the solutions can be diluted and still retain this blanching power, and I found that a drop of as weak a solution as 1 to 1,500,000 is sufficient to bleach the eyelid within a minute. In this case the blanching does not last very long, but still the effect is sufficient to show how remarkably strong the substance is. This means that one of the tablets of adrenalin tertrate which I have here when dissolved in two gallons of water will show the activity of the substance on the eyelid, or in other words, one drop of the solution of 1 to 1000 which is now before you when put into an ounce of water or normal salt solution will suffice for this purpose. When I first made up bottles of Adrenalin for experimental purposes, some of them developed a growth similar to what you find in cocaine and ether, but I have since removed that objection by adding a little preservative. chloretone, I have found to act very nicely, a small quantity of it being quite sufficient to do away with the sediment. Apart from this however, I have done away with the necessity of keeping the preparation in solution by getting it made up in the tablets.

Another point I wish to direct attention to is this, that the properties of the substance are not destroyed by heat, and therefore a solution can readily be made sterile by boiling it, which you can do for whatever time you please without destroying the drug.

"With regard to the existance of bacteria or fungus growth, it all depends on the extent to which you expose the solution."

"The same thing applies to almost every other preparation. In fact if you take distilled water and expose it long enough to the air, the chances are that it will get infection. Adrenalin being of organic origin is of course more likely to become infected in a shorter period of time than water. In such cases as affections of the eye, where the organs are peculiarly sensitive it goes without saying that it is necessary to be more than ordinarily careful about the sterilization of any substance that is to be used as a hemostatic or remedial agent. Therefore when adrenalin is used in such cases all you have to do is to boil the solution, and if that does not do, boil it again, say for twenty-four hours if you like."

"Since I have added chloretone, I am perfectly satisfied as to the stability of the preparation for all practical purposes. I have made up a thousand bottles with chloretone which have not yet been opened, and they remain perfectly bright. Those that we have opened, I admit, we

cannot be sure of. I hope by means of further investigations along this line to be able to produce a substance that will be perfectly stable."

In conclusion, it should be observed that in no instance has there been that tendency to an increase in the amount of the bleeding, subsequent to operation, which has been remarked by other observers in connection with the earlier preparations from the gland. A uvulotomy in a bleeder was followed by the loss of scarcely one drop of blood. Nor have there been any constitutional disturbances whatever appreciable after its use.

The drug is therefore, a valuable addition to our aemamentarium ;

First,—to reduce superficial congestion, in acute inflammation of the mucous membranes.

Second,—as an aid to diagnosis.

Third,—as an aid to bloodless operations, where ligation cannot be employed.

Fourth,—as a means of controlling severe hæmorrhage after operations.

THE FIGHT AGAINST TUBERCULOSIS*

In the Light of the Experience Gained in Successful Combat of Other Infectious Diseases.

By PROF. ROBERT KOCH, Geh. Med. Rath.

The task with which this Congress will have to busy itself is one of the most difficult, but it is also one in which labor is most sure of its reward:

I need not point again to the innumerable victims tuberculosis annually claims in all countries, nor to the boundless misery it brings on the families it attacks. You all know that there is no disease which inflicts such deep wounds on mankind as this. All the greater, however, would be the general joy and satisfaction if the efforts that are being made to rid mankind of this enemy, which consumes its inmost marrow, were crowned with success.

There are many, indeed, who doubt the possibility of successfully combating this disease, which has existed for thousands of years, and has spread all over the world. This is by no means my opinion. This is a conflict into which we may enter with a surely founded prospect of success, and I will tell you the reasons on which I base this conviction.

TUBERCULOSIS A PREVENTABLE DISEASE.

Only a few decades ago the real nature of tuberculosis was unknown to us ; it was regarded as a consequence, as the expression, so to speak, of social misery, and, as this supposed cause could not be got rid of by simple means, people relied on the probable gradual improvement of social conditions, and did nothing. All this is altered now. We know

* *British Medical Journal.*

that social misery does indeed go far to foster tuberculosis, but the real cause of the disease is a parasite—that is, a visible and palpable enemy, which we can pursue and annihilate, just as we can pursue and annihilate other parasitic enemies of mankind.

Strictly speaking, the fact that tuberculosis is a preventable disease ought to become clear as soon as the tubercle bacillus was discovered, and the properties of this parasite and the manner of its transmission became known. I may add that I, for my part, was aware of the full significance of this discovery from the first, and so will everybody have been who had convinced himself of the casual relation between tuberculosis and the tubercle bacillus. But the strength of a small number of medical men was inadequate to the conflict with a disease so deeply rooted in our habits and customs. Such a conflict requires the co-operation of many, if possible of all, medical men, shoulder to shoulder with the State and the whole population. The moment when such co-operation is possible seems now to have come. I suppose there is hardly any medical man now who denies the parasitic nature of tuberculosis, and among the non-medical public, too, the knowledge of the nature of the disease has been widely propagated.

Another favorable circumstance is that success has recently been achieved in combating several parasitic diseases, for we have learned from these examples how the conflict with pestilences is to be carried on.

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SPUTUM THE MAIN SOURCE OF INFECTION IN TUBERCULOSIS.

These examples may suffice to show what I am driving at, which is to point out that, in combating pestilences, we must strike at the root of the evil, and must not squander force in subordinate ineffective measures. Now the question is, what has hitherto been done, and what is about to be done against tuberculosis, really strikes the root of tuberculosis, so that it must sooner or later die.

In order to answer this question it is necessary first and foremost to inquire how infection takes place in tuberculosis. Of course, I presuppose that we understand by tuberculosis only those morbid conditions which are caused by the tubercle bacillus.

In by far the majority of cases of tuberculosis the disease has its seat in the lungs, and has also begun there. From this fact it is justly concluded that the germs of the disease, that is, the tubercle bacilli, must have got into the lungs by inhalation. As to the question where the inhaled tubercle bacilli have come from, there is also no doubt. On the contrary, we know with certainty that they get into the air with the sputum of consumptive patients. This sputum, especially in advanced stages of the disease, almost always contains tubercle bacilli, sometimes in incredible quantities. By coughing and even speaking, it is flung into the air in little drops that is, in a moist condition, and can at once infect persons who happen to be near the coughers. But it may also be pulverized when dried, in the linen or on the floor, for instance and get into the air in the form of dust

In this manner a complete circle, a so-called *circulus vitiosus*, has been formed for the process of infection from the diseased lung, which produces phlegm and pus containing tubercle bacilli, to the formation of moist and dry particles (which, in the virtue of their smallness, can keep floating a good while in the air), and finally to new infection, if particles penetrate with the air into a healthy lung and originate the disease anew. But the tubercle bacilli may get to other organs of the body in the same way, and thus originate other forms of tuberculosis. This, however, is considerably rarer. The sputum of consumptive people, then, is to be regarded as the main source of the infection of tuberculosis. On this point, I suppose, we are all agreed. The question now arises whether there are not other sources too, copious enough to demand consideration in the combating of tuberculosis.

Great importance used to be attached to the hereditary transmission of tuberculosis. Now, however, it has been demonstrated by thorough investigation that, though hereditary tuberculosis is not absolutely non-existent, it is nevertheless extremely rare, and we are at liberty, in considering our practical measures, to leave this form of origination entirely out of account.

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HUMAN SPUTUM THE MAIN SOURCE OF HUMAN TUBERCULOSIS.

So the only main source of the infection of tuberculosis is the sputum of consumptive patients, and the measures for the combating of tuberculosis must aim at the prevention of the dangers arising from its diffusion. Well, what is to be done in this direction? Several ways are open. One's first thought might be to consign all persons suffering from tuberculosis of the lungs, whose sputum contains tubercle bacilli, to suitable establishments. This, however, is not only absolutely impracticable, but also unnecessary. For a consumptive who coughs out tubercle bacilli is not necessarily a source of infection on that account, so long as he takes care that his sputum is properly removed and rendered innocuous. This is certainly true of very many patients, especially in the first stages, and also of those who belong to the well-to-do classes, and are able to procure the necessary nursing. But how is it with people of very small means? Every medical man who has often entered the dwellings of the poor, and I can speak on this point from my own experience, knows how sad is the lot of consumptives and their families there. The whole family have to live in one or two small ill-ventilated rooms. The patient is left without the nursing he needs, because the able-bodied members of the family must go to their work. How can the necessary cleanliness be secured under such circumstances? How is such a helpless patient to remove his sputum, so that it may do no harm? But let us go a step further and picture the condition of a poor consumptive patient's dwelling at night. The whole family sleep crowded together in one small room. However cautious he may be, the sufferer scatters the morbid matter secreted by his diseased lungs every time he coughs, and his relatives close beside him must inhale this poison. Thus whole families are infected. They die out, and awaken in the minds of those who do not know the infectiousness of tuberculosis the opinion

that it is hereditary, whereas its transmission in the cases in question was due solely to the simplest process of infection, which do not strike people so much, because the consequences do not appear at once, but generally only after the lapse of years.

FOCI OF TUBERCULOUS INFECTION.

Often, under such circumstances, the infection is not restricted to a single family, but spreads in densely inhabited tenement houses to the neighbors, and then, as the admirable investigations of Biggs have shown in the case of the densely-peopled parts of New York, regular nests of foci of disease are formed. But, if one investigates these matters more thoroughly, one finds that it is not poverty *per se* that favors tuberculosis, but the bad domestic conditions under which the poor everywhere, but especially in great cities, have to live. For, as the German statistics show, tuberculosis is less frequent, even among the poor, when the population is not densely packed together, and may attain very great dimensions among a well-to-do population when the domestic conditions, especially as regards the bedrooms, are bad, as is the case, for instance, among the inhabitants of the North Sea Coast. So it is the overcrowded dwellings of the poor that we have to regard as the real breeding places of tuberculosis; it is out of them that the disease always crops up anew, and it is to the abolition of these conditions that we must first and foremost direct our attention if we wish to attack the evil at its root, and to wage war against it with effective weapons.

This being so, it is very gratifying to see how efforts are being made in almost all countries to improve the domestic conditions of the poor. I am also convinced that these efforts, which must be promoted in every way, will lead to a considerable diminution of tuberculosis. But a long time must elapse ere essential changes can be effected in this direction, and much may be done meanwhile in order to reach the goal much more rapidly.

THE NEED FOR HOSPITALS FOR CONSUMPTIVES.

If we are not able at present to get rid of the danger which small and overcrowded dwellings involve, all we can do is to remove the patients from them, and, in their own interests and that of the people about them, to lodge them better; and this can be done only in suitable hospitals. But the thought of attaining this end by compulsion of any kind is very far from me; what I want is that they may be enabled to obtain the nursing they need better than they can obtain it now. At present a consumptive in an advanced stage of the disease is regarded as incurable and as an unsuitable inmate for a hospital. The consequence is that he is reluctantly admitted and dismissed as soon as possible. The patient, too, when the treatment seems to him to produce no improvement, and the expenses, owing to the long duration of his illness, weigh heavily upon him, is himself animated by the wish to leave the hospital soon. That would be altogether altered if we had special hospitals for consumptives, and if the patients were taken care of there for nothing, or at least at a very moderate rate. To such hospitals they would will-

ingly go; they could be better treated and fed there than is now the case. I know very well that the execution of the project will have great difficulties to contend with, owing to the considerable outlay it entails. But very much would be gained if, at least in the existing hospitals, which have to admit a great number of consumptives at any rate, special wards were established for them in which pecuniary facilities would be offered them. If only a considerable fraction of the whole number of consumptives were suitably lodged in this way, a diminution of infection, and consequently of the sum total of tuberculosis, could not fail to be the result. Permit me to remind you in this connection of what I said about leprosy. In the combating of that disease also great progress has already been made by lodging only a fair number of the patients in hospitals. The only country that possesses a considerable number of special hospitals for tuberculous patients is England, and there can be no doubt that the diminution of tuberculosis in England, which is much greater than in any other country, is greatly due to this circumstance. I should point to the founding of special hospitals for consumptives and the better utilization of the already existing hospitals for the lodging of consumptives as the most important measures in the combating of tuberculosis, and its execution opens a wide field of activity to the State, to municipalities, and to private benevolence. There are many people who possess great wealth, and would willingly give of their superfluity for the benefit of their poor and heavily afflicted fellow creatures, but do not know how to do this in a judicious manner. Here is an opportunity for them to render a real and lasting service by founding consumption hospitals or purchasing the right to have a certain number of consumptive patients maintained in special wards of other hospitals free of expense.

As, however, unfortunately, the aid of the State, the municipalities, and rich benefactors will probably not be forthcoming for a long time yet, we must for the present resort to other measures that may pave the way for the main measure just referred to, and serve as a supplement and temporary substitute for it.

NOTIFICATION.

Among such measures I regard obligatory notification as specially valuable. In the combating of all infectious diseases it has proved indispensable as a means of obtaining certain knowledge as to their state, especially their dissemination, their increase and decrease. In the conflict with tuberculosis also we can not dispense with obligatory notification; we need it not only to inform ourselves as to the dissemination of this disease, but mainly in order to learn where help and instruction can be given, and especially where the disinfection which is so urgently necessary when consumptives die or change their residences has to be effected. Fortunately it is not at all necessary to notify all cases of tuberculosis, nor even all cases of consumption, but only those which, owing to the domestic conditions, are sources of danger to the people about them. Such limited notification has already been introduced in various places in Norway, for instance, by a special law, in Saxony by a ministerial

decree, in New York and in several American towns, which have followed its example. In New York, where notification was optional at first and was afterwards made obligatory, it has proved eminently useful. It has thus been proved that the evils which it used to be feared the introduction of notification for tuberculosis would bring about need not occur, and it is devoutly to be wished that the examples I have named may very soon excite emulation everywhere.

DISINFECTION.

There is another measure, closely connected with notification—namely, disinfection, which, as already mentioned, must be effected when consumptives die or change their residence, in order that those who next occupy the infected dwelling may be protected against infection. Moreover, not only the dwellings but also the infected beds and clothes of consumptives ought to be disinfected.

EDUCATION OF THE PUBLIC.

A further measure, already recognized on all hands as effective, is the instructing of all classes of the people as to the infectiousness of tuberculosis, and the best way of protecting oneself. The fact that tuberculosis has considerably diminished in almost all civilized states of late is attributable solely to the circumstance that knowledge of the contagious character of tuberculosis has been more and more widely disseminated, and that caution in intercourse with consumptives has increased more and more in consequence. If better knowledge of the nature of tuberculosis has alone sufficed to prevent a large number of cases, this must serve us as a significant admonition to make the greatest possible use of this means, and to do more and more to bring it about that everybody may know the dangers that threaten him in intercourse with consumptives. It is only to be desired that the instructions may be made shorter and more precise than they generally are, and that special emphasis be laid on the avoidance of the worst danger of infection, which is the use of bedrooms and small, ill-ventilated workrooms simultaneously with consumptives. Of course, the instruction must include directions as to what consumptives have to do when they cough and how they are to treat their sputum.

SANATORIA.

Another measure which has come into the foreground of late, and which at this moment plays to a certain extent a paramount part in all efforts for the combating of tuberculosis, works in quite another direction. I mean the founding of sanatoria for consumptives.

That tuberculosis is curable in its early stages must be regarded as an undisputed fact. The idea of curing as many tuberculosis patients as possible in order to reduce the number of those that reach the infectious stage of consumption, and thus to reduce the number of fresh cases, was therefore a very natural one. The only question is whether the number of persons cured in this way will be great enough to exercise an appreciable influence on the retrogression of tuberculosis. I will try to answer his question in the light of the figures at my disposal.

According to the business report of the German Central Committee for the Establishment of Santoria for the Cure of Consumptives, about 5500 beds will be at the disposal of these institutions by the end of 1901, and then, if we assume that the average stay of each patient will be three months, it will be possible to treat at least 20,000 patients every year. From the reports hitherto issued as to the results that have been achieved in the establishments we learn further that about 20 per cent. of the patients that have tubercle bacilli in their sputum lose them by the treatment there. This is the only sure test of success, especially as regards prophylaxis. If we make this the basis of our estimates, we find 4000 consumptives will leave these establishments annually as cured. But, according to the statistics ascertained by the German Imperial Office of Health, there are 226,000 persons in Germany over 15 years of age who are so far gone in consumption that hospital treatment is necessary for them. Compared with this great number of consumptives, the success of the establishments in question seems so small that a material influence on the retrogression of tuberculosis in general is not yet to be expected of them. But pray do not imagine that I wish, by this calculation of mine, to oppose the movements for the establishment of such santoria in any way. I only wish to warn against an over-estimation of their importance which has recently been observable in various quarters, based apparently on the opinion that the war against tuberculosis can be waged by means of santoria alone, and that other measures are of subordinate value. In reality the contrary is the case. What is to be achieved by the general prophylaxis resulting from recognition of the danger of infection and the consequent greater caution in intercourse with consumptives is shown by a calculation of Cornet's regarding the decrease of mortality from tuberculosis in Prussia in the years 1889 to 1897. Before 1889 the average was 31.4 per 10,000, whereas in the period named it sank to 21.8, which means that, in that short space of time, the number of deaths from tuberculosis was 184,000 less than was to be expected from the average of the preceding years. In New York, under the influence of the general sanitary measures directed in a simple exemplary manner by Biggs, the mortality from tuberculosis has diminished by more than 35 per cent. since 1886; and it must be remembered that both in Prussia and in New York the progress indicated by these figures is due to the first beginnings of these measures. Considerably greater success is to be expected of their further development. Biggs hopes to have got so far in five years that in the city of New York alone the annual number of deaths from tulosis will be 3,000 less than formerly.

Now, I do indeed believe that it will be possible to render the sanatoria considerably more efficient. If strict care be taken that only patients be admitted for whom the treatment of those establishments is well adapted, and if the duration of the treatment be prolonged, it will certainly be possible to cure 50 per cent., and perhaps still more. But even then, and even if the number of sanatoria be greatly increased, the total effect will always remain but moderate. The sanatoria will never render the other measures I have mentioned superfluous. If their number become great, however, and if they perform their functions properly, they may materially aid the strictly sanitary measures in the conflict with tuberculosis.

MISCELLANEOUS.

THE EARLIEST SIGNS OF TUBERCULOSIS.—Professor Bozzalo, of Turin, in a paper read at the recent International Congress of Tuberculosis at Naples, has conveniently summarized the following eleven important points which are of assistance in forming a diagnosis of pulmonary phthisis in its earliest stages. They are: 1. Albuminuria alternating with phosphaturia. 2. A pseudochlorosis distinguishable from true chlorosis by the slighter degree of reduction of the hemoglobin and by the less-marked vascular and cardiac disturbances (palpitation, soft pulse, pulsating arteries, etc.). 3. The presence of gastric disturbances like gastralgia, anorexia, nausea, and vomiting. 4. Tachycardia in the absence of fever. 5. Diminution of blood-pressure. 6. A rise of temperature following bodily or mental exertion above the slight rise proper to health. In women a rise of from 0.3° to 0.4° C. is observable before the onset of each menstrual period. 7. A undue tendency to sweat after exertion, mental or bodily; also night-sweats. 8. Pain in the supra-orbital regions and in the neck. 9. A slight inequality of the pupils with a tendency to dilatation (mydriasis). 10. The occurrence of herpes zoster. 11. Enlargement of the spleen. Of these, the first seven symptoms are the most frequently met with and possess considerable diagnostic value.—*Lancet*.

THE MEDICAL AND SURGICAL TREATMENT OF ACUTE AND CHRONIC LYMPH NODES OF THE CERVICAL REGION. The writer concludes as follows:

1. The cause of tuberculous adenitis of the cervical region is almost always local and takes place through the buccal cavity.

2. The glandular manifestation, when it progresses, and especially when it is followed by suppuration, indicates a damaged and usually useless, often dangerous, gland.

3. The removal of such a gland *in toto* and promptly is neither difficult nor dangerous, and is the treatment indicated.

4. Nature will probably provide a new and equally perfect protection in the stead of the one that is lost.

5. Multiple enlarged glands indicate a constitutional tendency which will not be benefited by removal, except when local discomforts and dangers indicate it.

6. Small groups or single slowly-growing glands are subject to the same indication.—H. Horace Grant, *Louisville Mo. Journal of Med. and Surgery*.

SIMPLE tapping, under full antisepsis, may be relied upon to relieve any hydrocele, and will cure a small percentage of cases.—*Med. Summary*.

NAPHTHALAN is the substance which Voges calls an antitoxin for mosquito bites. He states that its action on the poison from the bite is as effective and specific as that of an antitoxin on the bacterial toxin. Voges is at the head of the National Department of Hygiene of the Argentine Republic.—*Med. Times*.

HEPATIC DISTURBANCE, FUNCTIONAL.—

Rhubarb, powd.	8 grains.
Sodium bicarb.	20 grains.
Ipecac, powd.	1 grain.
Nux vomica, tinct	20 minims.
Peppermint water, to make	4 ounces.

A teaspoonful before each meal.

—LOCKWOOD.

BED-SORES.—If the nurse is competent this painful complication will rarely require treatment. It is advisable to rub the parts upon which the patient rests with alcohol, and daily sponging of the entire body with warm water and then with alcohol will add greatly to comfort. Should a suspicious spot of redness present, remove the pressure therefrom by an air-cushion, and prevent the folds of linen pressing patient. Dry dressings are preferable to moist for bed-sores, and oxide of zinc in powder or ointment is one of the most valuable remedies; acetate of aluminum has also a very beneficial effect. At times considerable loss of substance is found, giving rise to a very foul odor; in these cases a charcoal poultice acts remarkably well.—ROTCH (*American Medical Review*.)

HABITUAL CONSTIPATION.—

R. Sulphuris loti,	
Potass. bitartrat	aa dr. i.
Pulv. sennæ fol	dr. iv.
Syr. rhei	dr. ii.
Syr. rhamni purshianæ	ad oz. iii.
M. Sig.—Teaspoonful morning and evening.—	<i>Texas Clinic.</i>

OBSTINATE VOMITING.—

R. Acetanilidi	gr. vi.
Caffeinæ citratæ	gr. iii.
Camphoræ monobromatæ	gr. vi.

M. ft. pil. or chart., No. vi. Sig.—Dissolve in a little brandy, pour over cracked ice and give from a spoon. Repeat in one-half hour, if necessary.

R. Sodii bicarb.,	
Spir. etheris nitrosi	aa dr. iiss.
Aq. menthæ pip	q. s. ad oz. iv.

M. Sig.—One teaspoonful at a dose and repeat every few minutes until vomiting is relieved.

R. Tinct. iodi	m. x.
Aq. destil	oz. iv.

M. Sig.—One tablespoonful in half-glass of sweetened water between meals.—*Med. News.*

ORGANIC CEPHALALGIA.—There are very few headaches that give such overwhelming agony as those of organic character. These are usually, if not invariably, steady and violent.—If the pulse is also irregular it is confirmatory of the diagnosis. I know of no way in which relief can be more certainly obtained than by the use of potassium iodide.—DOUGLAS (*Public Health Journal*.)

EDITORIAL.

THE RELATION OF BOVINE TO HUMAN TUBERCULOSIS.

An unusual flutter has been caused in the medical profession as well as in scientific circles generally and among the laity by the declaration of Professor Koch at the London Congress of Tuberculosis, that it is impossible to transmit bovine tuberculosis to the human subject. This idea, which is by no means original with Professor Koch, is based on certain researches he has recently conducted in which he found it impossible to infect cattle with the sputa or the bacilli from cases of tuberculosis in man. The lay press, with characteristic eagerness to create a sensation when news is scarce, have accepted the learned Professor's opinions as absolute statements of fact and in consequence have drawn hasty conclusions and have indulged in much absurd comment wholly unwarranted by the data brought forward by the observer. It is always unsafe to accept the dictum of any investigator, no matter how eminent, unless substantiated by positive evidence. While any opinion expressed by so competent an authority as Dr. Koch is worthy of all respect and of careful investigation it would be exceedingly unwise to accept it as oracular. The medical world cannot forget the unpleasant reaction and the discredit to medicine that followed his premature announcement of a cure for tuberculosis a few years ago. Moreover since the tuberculin *fusco*, Koch's contributions to medical science have not been such as to re-establish him in the full confidence of the profession and many regret that he did not allow his fame to rest on the sure foundation of his splendid achievements earlier in his career.

In his investigations into malaria and Texas fever, he showed a tendency to arrogate to himself credit for discoveries in which others had preceded him many years, and this disinclination to give due credit to fellow-workers in the field of Science has been particularly resented on this side of the Atlantic. Besides, what is now heralded in the secular press as an epoch-making discovery—that man is insusceptible to bovine tuberculosis, was suggested by Theobald Smith and others some years ago but in the guarded and dignified manner of careful investigators. From the impossibility of using human subjects for experimental purposes there is no direct proof forthcoming that man cannot be infected by the organisms of bovine tuberculosis. Because he found it impossible to produce the disease in animals by inoculating them with the germs of

human tuberculosis, Koch concludes that the diseases in man and cattle are entirely different and therefore, reasons apparently by analogy, that man is not susceptible to bovine tuberculosis. Such evidence certainly does not establish his contention and will not convince. So far as weight of authority goes, he is opposed by the general opinion of the Congress at which his paper was read, by Virchow, Professor McFadyean, and certainly by the majority of clinicians in all parts of the world. The matter must still be considered one of the unsettled problems in medicine. The general interest stirred up by Koch's announcement will undoubtedly stimulate research in the matter, which is probably the greatest result that will follow on what he has said.

To jump from Koch's opinions to the conclusion that all the restrictions heretofore placed on the sale of the milk and meat of tuberculous animals are entirely unnecessary, and that there is no danger to be feared from the consumption of these articles, is an absurdity for which it would be unfair to hold him responsible. No doubt a little sober second thought on the part of those who expected an upheaval in the present sanitary regulations, with a repeal of the laws passed for the public protection will convince them that, be the outcome of further investigations what they may, milk and meat from animals suffering from tuberculosis or other diseases will never be either safe or desirable for human food. Too thorough and stringent precautions can never be taken to insure that such potent carriers of infection reach the consumer in as pure and wholesome a condition as possible.

Considering the ill effect of the heat of the dog days, the medical profession can well afford to smile at the silly clap-trap in the way of editorial criticism offered by some of the lay press in reference to the alleged unnecessary precautions against tuberculosis upon which we have insisted for many years.

A DOMINION MEDICAL DEFENCE UNION.

The District of St. Francis Medical Association, Lennoxville, Quebec, during the past winter organized a Medical Defence Union, obtained a charter and arranged for the enrolment of practitioners in good standing in all parts of the Dominion as members on the payment of a yearly fee, or life membership on the payment of a larger fee, if desired. We referred editorially to this organization some time ago, and while approving of the scheme in a general way, we then expressed the opinion that this work more properly belonged to and could be more efficiently carried out

by an association representing the profession in all parts of the Dominion. We are pleased to learn that the Union before referred to are of the same opinion and have accredited Dr. Russel Thomas to the Dominion Medical Association at Winnipeg as their representative, with instructions to arrange if possible for the Dominion Association to take over the work of the local union, appoint their own officers and make such other arrangements for carrying out the scheme as they may think best. The St. Francis Association in this matter have shown a most commendable spirit and we hope the Dominion Association will receive their proposition favorably. There is certainly no more urgent need on the part of the medical profession than the formation of such a union and our national association could undertake no more important service than lending itself to carrying the scheme into effect. We hope, and in doing so we believe we express the wishes of our professional brethren in all parts of the Dominion, that after the Winnipeg meeting we may have a Union for Medical Defence operative in all parts of Canada.

EDITORIAL NOTES.

Extensive alterations and improvements are being made in Trinity Medical College, preparatory to the opening of the fall session on Sept. 25th. Dr. Charles Sheard will deliver the introductory lecture.

It is rumored that a movement is on foot, with good financial backing, looking toward the establishment in Toronto of a new hospital to be devoted exclusively to the treatment of the surgical diseases of children.

The annual meeting of the British Columbia Medical Association will be held in Victoria on Sept. 5th and 6th, 1901. This date has been chosen so as to allow of the attendance of professional brethren from the east, after the meeting of the Dominion Association at Winnipeg. A cordial invitation is extended by the British Columbia Association to all and sundry to come and partake of western hospitality and to enjoy the cooling breezes of the Pacific.

The British Medical Journal of July 20th makes the following suggestion in reference to a fusion of the various medical societies in Toronto. Our local necessities are evidently known abroad and the scheme mentioned is well worth careful consideration: "It is hoped that

Dr. Alexander Macphedran, Professor of Medicine in the University of Toronto, and Dr. John Taylor Fotheringham, one of the Teachers in Trinity Medical College, Toronto, who are now in London, will be present at the annual meeting of the Association, when, we are sure, they will be made very welcome. Dr. Blackader of Montreal is also on his way to Cheltenham. We remember that when the Association met in Montreal, a wish was widely expressed (and we are under the impression that Dr. Cameron shared in it) that the various Medical Societies in the city of Toronto might see their way to fusing themselves into one body which should constitute the Toronto Branch of the British Medical Association, the "Units" at the same time retaining their autonomy and distinctive characters so far as their special work is concerned. Supposing that the scheme for the improved Constitution of the British Medical Association should find favour at the general meeting, it would be a very happy commencement of the new era if so important a Canadian centre as that of Toronto could arrange to fall in line with us. We are, of course, to say how the Council would view the question of "autonomy," but unable from the tenour of the discussions in the Constitution Committee we have no hesitation in saying that the ideas of that Committee were characterized by a liberality of thought and a breadth of feeling towards "Divisions" and Branches—British, Colonial, and Indian—which promised most satisfactory results. We venture to express the hope that our Canadian brethren will take an active personal interest both in the business and in the scientific part of the forthcoming meeting, and that they will also be able to carry back to Canada pleasant recollections of the social part of the programme. Never was the time more opportune than it is at present for a general and complete association of British medical men, every one of whom is with ourselves, no doubt, equally desirous of helping in the great work of organization.

PERSONAL.

Dr. Harold Parsons is taking a holiday in Muskoka.

Dr. Geo. H. Fish (Trinity '98) has begun practice at Brougham, Ont.

Dr. J. L. Davison, F. Fenton and D. Gibb Wishart are spending a holiday on Georgian Bay.

Dr. Herbert A. Bruce has taken possession of his beautiful new house at 68 Bloor street east.

Dr. W. P. Caven has resumed practice after his holiday in Europe and afterwards in Muskoka.

Dr. Geoffrey Boyd and Mrs. Boyd have returned to Toronto after spending a month on the Georgian Bay.

Dr. A. P. Chalmers (Trinity '92) and Mrs. Chalmers of Oil Springs, have left for Europe where they will spend about a year.

Dr. Harry B. Anderson was married on Aug. 14th to Miss Florence Northway, daughter of John Northway Esq., Maple Avenue, Rosedale.

Dr. R. J. Dwyer has located on Bloor street at the head of Spadina Ave., in one of the fine houses built by Dr. G. S. Ryerson.

Dr. L. M. Palmer and R. A. Stevenson of Toronto have sailed from Boston for Liverpool. They will spend a short holiday in Europe.

Dr. Charles B. Shuttleworth, Demonstrator of Anatomy, Trinity Medical College, leaves for Europe in a few days where he will spend a year or two in post graduate study.

The many friends of Dr. Charles D. Parfitt (Trinity '94) will be pleased to learn that he has quite recovered from his serious illness of over a year ago which necessitated his giving up practice for a time.

Dr. F. C. Macdonald (Toronto '99) who served in the Royal Canadian Artillery during the South African war and afterwards as a civil surgeon has returned to Toronto none the worse for his various experiences.

BOOK REVIEWS.

ATLAS AND EPITOME OF OBSTETRIC DIAGNOSIS AND TREATMENT.

By Dr. O. Shaeffer, of Heidelberg. From the Second Revised German Edition. Edited by J. Clifton Edgar, M. D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 122 colored figures on 56 plates, 38 other illustrations, and 317 pages of text. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$3.00 net. Canadian Agents, J. A. Carveth & Co.

The difficulties attending the successful teaching of Obstetrics are much enhanced in Ontario by the lack of material and opportunity for practical demonstration, and by the precautions with which, wisely enough from one standpoint, maternity institutions are surrounded, so that the student graduates with but a meagre experience unless he has been more than ordinarily fortunate. This fact increases the importance of mechanical aids, charts and illustrations and creates the necessity for books such as this atlas. It would be idle to claim for it the position of a

text-book on Midwifery, the arrangement being inconvenient for continuous reading; but as a companion in the study or the teaching of this subject, its plates and illustrations should make it invaluable, while the practitioner will find it a convenient book of reference especially on the subjects of abnormalities and obstetric operations.

The material for the very complete set of original drawings, which are here reproduced in a beautiful series of lithographs, was furnished by the Munich and Heidelberg Clinics; these rival in excellence anything recently attempted and alone make the book a good investment. Add to this a text which comprises extremely well completeness and brevity in the discussion of symptomatology and treatment, with a list of prescriptions useful in obstetrical practice and we have a series of features that should insure this number maintaining the popularity of the "Saunders' Medical Hand-Atlas."

This work while complete in itself is intended to be grouped as Vol. II with the "Atlas and Epitome of Labor and Operative Obstetrics" by the same author—also reviewed in this number. It is a volume of convenient size, bound in cloth, with 305 pages of text and 160 illustrations.

A. J. M.

A MANUAL OF HYGIENE FOR STUDENTS, PHYSICIANS AND MEDICAL OFFICERS.

By Charles Harrington, M. D., Assistant Professor of Hygiene in the Medical School of Harvard University. Illustrated with twelve plates and one hundred and five engravings. Lea Brothers & Co., Philadelphia and New York, 1901.

Dr. Harrington has made a valuable addition to medical literature and is deserving of the thanks not only of students and practitioners of medicine but also of all medical officers, civil and military.

In this book of about seven hundred pages he has embraced everything which the sanitary scientist must know and has presented it to us in a most fascinating form.

He devotes the first two hundred pages to Foods, and treats the subject exhaustively; then we find "Air," "Soil" and "Water" each given due consideration; "Habitations and Schools," "Disposal of Sewage and Garbage," "Disinfectants" and "Quarantine" are each treated of in separate chapters; while the hygiene of "Army," "Navy," "Tropics," "Occupations" and that of the "Person" make interesting reading.

"Vaccination" is not discussed as fully as we would have wished for, the chapter on that subject consisting of little more than an argument in favor of the operation.

Dr. Harrington's closing sentence in this chapter perhaps explains his reason for limiting his remarks on the subject—"As a matter of fact, the subject of protective inoculation, except so far as it relates to small-

pox, is as yet only in its infancy, but at the same time is one of the most promising fields of scientific research."

With the exception of this one chapter we are delighted with the work and can most heartily recommend it to any one desiring light on the subject.

F. F.

A MANUAL OF PERSONAL HYGIENE.

Proper Living upon Physiologic Basis, by American Authors. Edited by Walter L. Pyle, A. M., M. D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia. Illustrated, 350 pages. Published by Saunders & Co., Philadelphia, Pa. Canadian Agents, J. A. Carveth & Co., Toronto. Price \$1.50.

This Manual sets forth the best means of developing and maintaining physical and mental vigor, and consists of a series of articles upon the Hygiene of the Digestive Apparatus, the Skin and its appendages. The Vocal and Respiratory Apparatus, the Ear, the Eye, and the Brain and Nervous System, and a concluding chapter on Physical exercise.

Digestion is treated by Stockton, and the Skin by Fox, and the Voice by Ingals, a sufficient guarantee that the work is well done.

This volume is worthy of being placed in the hands of the teachers, and especially of the mothers, who are desirous of securing the development of their pupils and off-spring in such a way as to secure the fullest bodily health. Particular attention is given to such important matters as the care of the teeth, regulation of the diet, the influence of dress and carriage upon digestion in women, the care of the complexion, the clothing, the selection of shoes, care of the hair, etc., etc.

These are all topics of which the general public know little, and the Medical profession, not much more; and the more widely such knowledge, as is contained in these pages, is disseminated, the more perfect will be the physical development of our race.

D. J. G. W.

A MANUAL OF THE DISEASES OF THE NOSE AND THROAT.

By C. G. Coakley, Second Edition. 103 Engravings, four Colored Plates, 566 Pages. Published by Lea Brothers & Co., New York and Philadelphia. Canadian Agents, J. A. Carveth & Co., Toronto. Price, \$2.75.

This valuable Manual, in addition to revision contains an entirely new chapter on Affections, of the Upper Respiratory Tract, in the Infectious Diseases, covering the subjects of Scarlet Fever, Measles, Pertussis, Typhoid, Glanders, Erysipelas, etc.

The appearance of a new edition, so shortly after the first, is highly creditable to the author, and this volume will have a ready sale, owing to its convenient size, clearness of type, and readableness.

D. J. G. W.

A System of Physiologic Therapeutics. A Practical Exposition of the Methods, other than Drug-giving, Useful in the Treatment of the Sick. Edited by Solomon Solis Cohen, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College, etc. Volume 11, **Electrotherapy**, by George W. Jacoby, M.D., Consulting Neurologist to the German Hospital, New York City; to the Infirmary for Women and Children, etc. In two Books: Book II, **Diagnosis; Therapeutics.** Illustrated. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa. Canadian Agents, Chandler & Massey, Ltd., Toronto and Montreal. Price, eleven volumes, \$22.00 net.

Volume II of this system deals with the applications of electricity in the diagnosis, prognosis and treatment of disease. The opening chapters are devoted to electrophysiology and electropathology. The methods of applying electrical currents in the diagnosis of disease is fully discussed and will prove very useful to the clinician. The various therapeutic applications of electricity are dealt with in a practical manner and the limits of its usefulness in different diseases defined. One is favorably impressed with this part of the work from the fact that it avoids overestimating the value of electrotherapeutics as is so often done in special treatises on the subject—a fault which makes them unsafe guides for the general practitioner. An addendum contains chapters dealing with the "Surgical Uses of Electricity" by John Chalmers Dalosta; "Electricity in Diseases of the Eye" by Dr. Edward Jackson, of Denver; one on "Diseases of the Nose, Throat and Ear" by Dr. Wm. Scheppegrell, of New Orleans; "Electricity in Gynaecology" by Dr. Franklin H. Martin, of Chicago, and "The Electric Therapeutics of Skin Diseases" by Dr. A. H. Ohmann-Dumesnil, of St. Louis. The whole volume contains some 300 pages, is beautifully printed and well illustrated. This system should find a place in the library of every up-to-date practitioner.

Clinical Pathology of the Blood—A Treatise on the General Principles and Special Applications of Hematology. By James Ewing, A.M., M.D., Professor of Pathology in Cornell University Medical College, New York City. Illustrated with thirty engravings and fourteen colored plates drawn by the author. Lea Bros. & Co., Philadelphia and New York, 1901.

This is a work on the clinical pathology of the blood emanating from the pathological laboratory. Part I deals with General Physiology and Pathology of the Blood, including technique; Part II with the Special Pathology of the Blood; Part III with the Blood in the Acute

Infectious Diseases; Part IV in Constitutional Diseases; Part V in General Diseases of the Viscera, and Part VI with Animal Parasites. It will thus be seen that the whole range of Haematology is covered.

The author has done his work thoroughly and has succeeded in producing the most complete treatise on the subject that has appeared in English. The different chapters are followed by very complete bibliographies which will be found especially useful to students in this field of medicine. The plates are fairly good, but present a rather diagrammatic appearance. We also think a larger number of illustrations would have been very acceptable in a work of this sort. Taken altogether, however, the work is an excellent one and will give satisfaction to any one interested in this rapidly advancing branch of practical medicine.

H. B. A.

SAUNDERS' QUESTION COMPENDS.

Essentials of Refraction and of Diseases of the Eye. By Edward Jackson, A. M., M. D., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic. Third Edition, Revised and Enlarged. 12mo., 261 pages, 82 illustrations. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$1.00 net.

In this edition the work has been carefully revised and very much enlarged, the contents being more complete and more symmetrical than was possible in the earlier editions. The injuries of the eye by traumatism and the ocular symptoms and lesions of general diseases have now been given a consideration proportioned to the great importance they assume in the work of the general practitioner. There has been added also an account of the application of the tests of vision required in the army, navy and railway service.

This work has long since proved its usefulness to the beginner in ophthalmic work, to the student, and to the busy practitioner. Dr. Jackson, its author, is well known as a successful teacher. The entire ground is covered, and the points that most need careful elucidation are made clear and easy.

In the opening chapter the author deals clearly and concisely with the Essentials of Refraction.

In the next the Diseases of the Eye are described which occupies about 140 pages; disorders of movement, of the field of vision, of the lachrymal apparatus, lens, retina, iris etc., etc., are practically dealt with. At the end of this chapter is a list of medicines to be used with directions for their employment.

In the third section "Injuries of the Eye" are reviewed, such as contusions penetrating wounds, foreign bodies and burns.

A chapter on eye symptoms, of general diseases now follows. Affects produced by diseases of the nervous system, circulators and renal systems

chronic diseases, acute infectious diseases and toxic ambly opus—are dealt with.

The last chapter deals with the requirements of visions for schools, railroads and the public services.

Altogether this small volume is a valuable addition to the list of smaller treatises.

D. M. A.

SAUNDERS' MEDICAL HAND-ATLASES.

Atlas and Epitome of the Nervous System and its Diseases. By Professor Dr. Chr. Jakob, of Erlangen. From the Second Revised German Edition. Edited by Edward D. Fisher, M.D., Professor of Diseases of the Nervous System, University and Bellevue Medical College, New York. With 83 plates and copious text. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$3.50 net. Canadian Agents, J. A. Carveth & Co., Toronto.

One does not often see so good a piece of typography and book-making as this—and its merits as a handbook for the practitioner are beyond praise. For the proper study of nervous diseases education must proceed along two lines, better *pari passu*—the histological side means years of work in laboratory, and the clinical likewise years of work in practice. If either one of these two lines of study may be omitted it is the former, and with this Atlas and Epitome in his library, and transferred to his own mind and memory, the general practitioner is quite sufficiently armed for the prosecution of the clinical side of the study of this most important branch of medicine.

J. T. F.

SENN'S PRACTICAL SURGERY.

Practical Surgery: A Work for the General Practitioner. By Nicholas Senn, M.D., Ph.D., L.L.D., Professor of Surgery, Rush Medical College, Chicago. Handsome octavo volume of 1133 pages, with 650 illustrations, many in colors. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$6.00 net. J. A. Carveth & Co., Toronto, Canadian Agents.

Semper paratus is the motto of the book, and the author adheres to this motto from first to last.

It is not a work on general Surgery but a clear and able exposition of certain important sections of the subject. Especially those of the nature that requires prompt and particularly thoughtful handling.

The section on Emergency work is well put, primary treatment of wounds, suture of veins and tendons træmostases and ligature being well given and freely illustrated.

The chapter on Military Surgery, and what the military Surgeon should be, is full of interesting and instructive points not alone surgical but ethical and moral.

Fractures, Dislocations and Gunshot Wounds are treated at great length. A short chapter is devoted to Empyema, but it is much to the point there is no suggestion of doubt as to the propriety of the radical operation.

Abdominal Surgery is the chief theme of the Volume. Peritonitis in general, is first considered, and from every possible point of view, appendicitis is next dealt with, all that is new and useful nicely put and with much good sound advice. Under the heading of abdominal section are grouped the many conditions requiring it, with all the most approved methods of intestinal suture resections and anastomoses, occupying some 200 pages of valuable information and pleasant reading.

Hernia again makes an excellent chapter.

Joint resections and amputations, splendidly illustrated, close the work. It is indeed a volume of great value and should be sought after.

H. C. P.

Progressive Medicine. March, 1901., Vol. I. H. A. Hare & H. R. M. Landis. Lea Bros. & Co., Phila., & New York.

This is if possible the best volume in the well-known series, now indispensable to those who know its merits.

The contributors, and their subjects, are given below. The articles are so condensed and so well brought up to date, that we can scarcely review them, as they are themselves abstracts of all the recent important work done in the subjects discussed. Crandall has an article on Pediatrics which should be seen by all who are called on to treat children during this season. The Surgery of the Head, Neck and Chest is treated of by J. C. DaCosta. Packard's articles on Infectious Diseases, (Acute Rheumatism, Pneumonia and Influenza are included, with Typhoid and others) are most stimulating and valuable reading. Ludwig Hektoen writes on Pathology and, as one would expect, Bacteriology and Physiological Chemistry are much in evidence. The article includes an interesting resumé of present views and theories as to tumours and their origin. Rhinology and Laryngology are treated by Logan Turner of Edinburgh University, and Otology by R. L. Randolph of Johns Hopkins. This volume is thus seen to be of value and interest to the surgeon, the physician, the laboratory hand and the specialist.

J. T. F.

PUBLISHERS' DEPARTMENT.

THE EARLY DIAGNOSIS OF LOCOMOTOR ATAXIA.

The poor results derived from the treatment of tabes is often due to the fact that an early diagnosis has not been made or that patients do not apply for treatment in the early stages of the disease. Erb (*Med. Wochenschr.*) details a series of cases which had all been preceded by symptoms of secondary syphilis, some as far back as twenty-four years. In one group of cases the tendon reflexes were normal even after four to seven years duration of slight lancinating pain, bladder insufficiency, sensory disturbances, easy fatigue, slight pupillary sign and "Rhombberg's Symptom." A second group presented no subjective symptoms whatever, and but very few and almost unnoticeable objective symptoms. Still another group was attended by marked gastro-intestinal disturbances, not typical of tabes, and with bilateral paresis of the sixth nerve and pupil sign. Author insists on the necessity of always investigating the knee-jerk and pupil reflex in suspected cases. Tabetic symptoms with an antecedent syphilis are always serious. Absence of a syphilitic history does not establish the existence of tabes, even though some symptoms may exist. For the pains in tabes dorsalis, Antikamnia and Salol Tablets have been found most excellent when given in doses of two tablets every two or three hours. The antikamnia acts particularly upon the spinal cord and its sensory tracts, and consequently takes the place of opium and its alkaloids so often used to relieve patients subject to these attacks. The favorable effect of salol in this and similar conditions is well known.

HYPEREMESIS GRAVIDARUM.

Dr. J. W. P. Smithwick writes in the *Southern Medical Journal* concerning vomiting during pregnancy and its remedies. He says: "I find that Ingluvin, manufactured by Wm. R. Warner & Co., of Philadelphia, Pa., gives me the best clinical results. I have frequently seen patients who would vomit immediately upon taking anything into the stomach almost relish this preparation, and the vomiting immediately cease, irrespective of its primary cause. Having had such good results with it in the various forms of nausea and vomiting, I was induced to try it in the vomiting of pregnancy, both physiological and pathological, and have had excellent results up to date. In those patients in whom the vomiting amounts to nothing more than the "morning sickness," which may be considered physiological, I have found it to give a very great amount of relief, as well as in others, when it becomes to be pathological. It relieves the nausea and increases the appetite and assimilation to a marked degree,

so that the patient's system is put in an excellent condition to undergo the ordeal of labor. By relieving the nausea and increasing the assimilation and digestion, it aids in regulating the functions of the liver and kidneys, and other emunctories of the organism, thereby overcoming all tendencies to the occurrence of postpartum complications and eclampsia.

Dr. Smithwick gives a number of cases, one of which is quoted: "Mrs. S.—, aged 32. This was the third pregnancy. She had been troubled no little with nausea and vomiting during the preceding pregnancies, but at this time the condition was very greatly exaggerated beyond what it had been. She consulted me during the sixth week, stating that there were very few times she could retain either food or drink in her stomach. Her bowels were constipated, skin thick and sallow in appearance, and tongue heavily coated. She was much emaciated, and in low spirits, as she had had some difficulty with former births, all being instrumental deliveries, due to inertia of the uterus. I prescribed *Ingluvin* in three daily doses of fifteen grains each. In one week she reported that she was improving rapidly, having only had, during that time, two spells of nausea and vomiting. Her appetite was good, and she could retain almost anything that she desired for food. Her bowels were in an active condition, and skin much better in appearance. Her spirits were decidedly more buoyant. I directed her to continue the medicine in the prescribed dose until near the time of confinement. She did so, and I attended her. The labor was perfectly normal in all respects, and was a short one when compared with her previous labors, lasting about six hours. Convalescence was rapid, and recovery complete, and she stated that she never felt so well that early after a confinement. I attribute all the improvement in this individual case to the use of *Ingluvin*, being fully convinced of its value as a therapeutic agent."

SANMETTO IN SPASMS OF BLADDER NECK.

Sanmetto is not new to me as I have used it two years. I will report a case that came under my treatment on the fourth day of February. A lady about forty years of age had spasms of the neck of the bladder. She was in constant pain. She could neither sleep nor sit still. She was compelled to urinate as often as every half hour. I commenced giving her Sanmetto, a teaspoonful every two hours for the first twelve hours. The next twenty-four hours I gave her a teaspoonful every three hours, and the next twenty-four hours, every four hours, unless sleeping. Discharged the woman the fifth day as well, and she has been well ever since. A prominent physician of our city had been treating this patient, but she received no benefit from his treatment whatever.

WM. S. McLEAN, M. D.

Saginaw, E. S., Mich.

WHEY-CREAM MODIFICATIONS IN INFANT-FEEDING.

F. W. White and M. Ladd (*Philadelphia Medical Journal*, Feb. 2, 1901), from their work in this line, have arrived at the following conclusions:

1. By the use of whey as a diluent of creams of various strengths they are able to modify cow's milk so that its proportions of caseinogen and whey proteids will closely correspond to the proportions present in human milk. They therefore render it much more digestible and suitable for infant feeding.

2. The best temperature for destroying the rennet enzyme in whey is 65.5° C. Whey or whey mixtures should not be heated above 69.3° C. in order to avoid the coagulation of the whey proteids. The amount of whey proteids in the whey obtained by these observers was 1 per cent., while in the analysis of the whole milk approximately three-fourths of total proteid was caseinogen and one-fourth was whey proteids.

3. On the basis of these analyses they were able to obtain whey cream mixtures, with a maximum of 0.90 per cent. and a minimum of 0.25 per cent. of whey proteids in combination with percentages of caseinogen varying from 0.25 to 1; of fats, from 1 to 4 per cent; of milk-sugar from 4 to 7 per cent.

4. The emulsion of fat in whey, barley-water, gravity cream and centrifugal cream mixtures was the same, both in the macroscopic and microscopic appearances. The combination of heat and transportation, such as sometimes occur in hot weather, partially destroys the emulsion in all forms of modified milk, but this disturbance can be prevented by the simple precaution of keeping the milk cool during delivery.

5. Whey cream mixtures yield a much finer, less bulky and more digestible coagulum than plain modified mixture with the same total proteids; the coagulum is equalled in fineness only by that of barley-water mixtures. The coagulum yielded by gravity cream mixtures and centrifugal cream mixtures is the same in character.—*Medical Age*.

A TIMELY REMINDER.

The importance of keeping the baby's nursing bottle perfectly clean especially in hot weather, is not sufficiently realized by mothers; many of them are not only careless but actually ignorant of the danger lying in unclean bottles, and we feel called upon to direct attention anew to this menace to infantile life. Mothers should be urged again and again to keep the bottle, also the nipple, perfectly clean.

A bottle having an opening in the lower end through which a stream of water may be run from the faucet, is the one that can be most easily cleaned and, therefore, the one that is most likely to be kept clean.—*Pediatrics*.

Wm S