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THE

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INDEX TO CONTENTS.

FORMULA

℞ Olei Morrhuæ (opt.) ℥vii.
Ferri Phosphat. ʒ ii.
Phosphori gr. i.
Glycerini, etc., q.s., ad. ℥xv.

Sig.—Take as directed by attending physician.

TRADE MARK Ferrol REGISTERED

With Creosote

℞ Olei Morrhuæ (opt.) ℥vii.
Ferri Phosphat. ʒ ii.
Phosphori gr. i.
Creosoti (Beechwood), min. cxii.
Glycerini, etc., q.s., ℥xv.

The Official Organs Pronouncing on "Ferrol" from the Medical Centres of our Dominion.

Ferrol.—In this preparation we have combined in the form of a perfect emulsion, phosphate of iron and cod liver oil, with the addition of a small quanity of phosphorus. The product is smooth and of uniform strength and supplies an excellent tonic food for use in wasting diseases and during convalescence.

Where the indications are such—as in pulmonary affections—that the addition of creosote would often add considerably to its value, Ferrol can be obtained with 112 minims of beechwood creosote added to each fourteen-ounce bottle under the heading of "Ferrol cum creosoto." An analysis made by Dr. R. A Pyne, of Toronto, shows that the product contains the different ingredients in the proportions claimed.

The manufacturers by publishing the exact formula of Ferrol and guaranteeing that no circulars or advertisements are enclosed in their packages, deserve the support of the profession in their efforts at having their business conducted strictly in accordance with medical ethics.—*Montreal Medical.*

FERROL AN IDEAL EMULSION.

Ferrol, an honest emulsion of cod liver oil, has been on the market for some years and given great satisfaction. It is a Canadian preparation, made from the purest and best oil procurable. The formula is on every bottle and it deserves the support of the medical profession. The manufacturing of this preparation has lately been taken over by the Ferrol Company of Toronto. It is the intention to push the sale in every legitimate way possible, but always and only through the medical profession and press.—*The Canadian Practitioner.*

Some years ago there was introduced to the medical profession in Canada a pharmaceutical product named Ferrol. The name was indeed a most happy one, as giving its composition at once, that of cod liver oil and iron. For some reasons Ferrol was at that time not pushed. Now, however, fortunately for both physician and patient, it has been revived and taken hold of by a company of strong capitalists who intend pushing it, as it ought to be. Ferrol can be produced either plain, consisting of phosphate of iron, phosphorus in minute quanity, glycerine and cod liver oil, or with creosote, the latter ingredient so combined as to form one of the most palatable products on the market, one which can almost be guaranteed not to cause the usual nausea and after eructations so frequently the case with cod liver oil in any other form but that of Ferrol. The Ferrol Co. of Toronto, Limited, are putting their article before the profession in a strictly ethical manner, advertising it only in the medical press, thus appealing to the profession in the strongest possible manner. We take pleasure in making this preliminary announcement, and add that Ferrol can be procured from any first-class druggist.—*Canadian Journal of Medicine and Surgery.*

There has been on the market for some years, a preparation which was very favorably received by the profession, but owing to changes in management, and some internal difficulties, the supply was irregular. Although all those who prescribed it had formed a high opinion of it, and kept repeating their prescriptions, a regular supply was not obtainable. This was a permanent emulsion of iron and cod liver oil, known as Ferrol. This preparation, as will be seen by our advertising pages, has been taken hold of in a thorough and ethical manner, and now physicians will be able to obtain the article demanded on their prescriptions. We can certainly recommend it to the profession as an emulsion of iron and cod liver oil that they can absolutely depend upon.—*Dominion Med. Monthly.*

We beg to call the attention of the profession to the preparation known as Ferrol—Iron and Cod Liver Oil. It is an excellent preparation, and when combined with creosote most useful in those cases where these products are indicated. The manufacturers are appealing to the profession alone and not to the general public, desiring in the most ethical manner possible to have its merits fully tested and reported upon.—*Medical Review.*

THE FERROL COMPANY OF TORONTO, Limited.

The Canada Lancet.

VOL. XXXI.] TORONTO, FEBRUARY, 1899. [No. 6.

THE USE OF HYDRAULIC PRESSURE IN GENITO-URINARY PRACTICE.

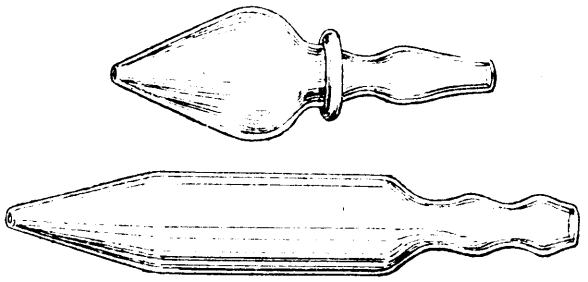
WITH ESPECIAL REFERENCE TO CONTRACTURE OF THE BLADDER.

Abstract of Article, Johns Hopkins Hospital, Baltimore.

By HUGH H. YOUNG, A.M., M.D.,
Assistant Resident Surgeon, Johns Hopkins Hospital.

About 1885 Dr. Halsted began treating cystitis by intravesical irrigations—forced in by hydraulic pressure without the use of a catheter. He had found that the bladder could be irrigated in this way while using the copious irrigation treatment for gonorrhea which he introduced at the Roosevelt Dispensary, and which has since been so widely adopted.

Many cases of cystitis have been treated at the Johns Hopkins Hospital by this method with very satisfactory results, Dr. Halsted's acorn nozzle, such as is used for urethral irrigations, being held tight in the meatus while the irrigating bag was elevated sufficiently to force the solution into the bladder. We are now using a longer nozzle with more gradual conical point which we devised especially for intravesical irrigations, and it has proved very satisfactory.



During the summer of 1896, a patient was admitted to the hospital suffering with chronic cystitis and very frequent micturition. Examination showed that his bladder was greatly contracted, holding only about 40 c.c. (℥i). After intravesical injections were begun it occurred to me that it might be possible to dilate the bladder by hydraulic pressure and thus lessen the disagreeable frequency of micturition.

At first only 40 c.c. could be forced in, but the capacity soon began to increase and at the end of ten days the bladder held 150 c.c. and the

acts of micturition were not nearly so frequent. Unfortunately I was prevented from continuing the treatment longer, though the results were very promising. The next case, however, demonstrated to a certainty the value of the method.

CASE I.—J. H., aged 65, admitted December 17, 1896, complaining of constant dribbling of urine, chronic cystitis of 30 years' standing, following rupture of the urethra, operation, etc. Cystitis became greatly aggravated six years ago, frequency of micturition increased and for the past three years has dribbled constantly—patient wearing cloths between the legs to absorb it. On examination, the bladder was found to hold only 30 c.c. (℥1), urine ammoniacal, full of pus and mucus. Intravesical irrigations begun, hydraulic pressure maintained as long as patient could stand the pain it produced. The tabulation shows the progress of dilatation.

CASE I.—J. H. CYSTITIS, THIRTY YEARS' DURATION.

DATE.	Day of Treatment.	CAPACITY OF BLADDER. Largest am't held on forced distention.	INTERVAL. Longest time between two urinations.		REMARKS.
			Hr.	Min.	
Dec. 17		30 c. c.	Drib bling.		Admission, urine ammoniacal, loaded with pus and mucus. Constant dribbling. Clothes saturated with urine.
" 26					Dilatation begun. Bichloride, 1 to 150,000, and Boracic acid, 2 per cent. b. i. d.
" 27	1	40		"	Urine clearer. Reaction less alkaline. Still dribbles.
" 30	4	90		"	
Jan. 6	11	200		"	Reaction acid. Great general improvement.
" 11	16	240		30	Has ceased to dribble. Urine voided every 30 minutes.
" 16	21	245	1		Bladder unable to expel all urine. Sixty c.c. residual. At times voids 16 c.c. naturally. Urine acid. Pus slight.
" 23	28	255	1	30	Treatment discontinued.
" 24					
Feb. 20		215			Treatment resumed (after a month). Urine again alkaline, voided at frequent intervals. Bladder about same size.
" 27	7	220			Bladder has been dilated from 30 to 280 c.c. Cystitis greatly improved. Dribbling ceased.
Mar. 6	14	280	3		Bladder, however, has very little "tone." The muscle has probably been largely replaced by fibrous tissue. At present there is a residual of 60 to 100 c.c. Great general improvement.

CASE II.—J. T., aged 41, admitted March 26, 1897, complaining of painful and frequent micturition, chronic cystitis ten years. Voids urine generally every fifteen minutes. Suffers constant pain in bladder. Passes large amounts of blood. Examination. Bladder holds 30 c.c. (℥ 1). Urine passed every 20 or 30 minutes. Alkaline, full of blood and pus. Dilatation treatment. Boric acid or Thompson's fluid irrigations without catheter four times daily. Chart shows progress.

CASE II.—J. T. CYSTITIS TEN YEARS' DURATION.

DATE.	Day of Treatment.	BLADDER CAPACITY. Largest am't held on forced distention.	URINE. Largest am't voided at one time.	INTERVAL. Longest time between two urinations. Hrs.	Min.	REMARKS.
May 26			30 c.c.		30	Admitted. Urine loaded with pus and blood, reaction alkaline. Great pain in bladder constantly present.
June 3	1	40 c.c.	30		30	Dilatation four times daily begun.
" 8	5	60	40	1	15	
" 11	8	85	70	1	40	General health improved. Pain now absent. Urine clearer.
" 18	15	105	80	2		Has gained 8½ lbs. in weight.
" 28	25	130	110	2	30	Patient greatly improved. Discharged, to continue treatment at home.
July 14		100	80	2		Home treatment has lost ground somewhat.
" 23		135	100	3		
" 29		160	130	4		No more blood or mucus, free from pain, feels like a new man.
Aug. 10		180		4		
Sept. 23						Irrigations have been discontinued by patient contrary to orders for more than a month. He writes that he still holds his urine three or four hours. He has no pain; is very well.

CASE III.—G. L. CYSTITIS, SIX YEARS' DURATION.

DATE.	Day of Treatment.	BLADDER CAPACITY. Largest am't held on forced dilatation.	URINE. Largest am't voided at one time.	INTERVAL. Longest time between two urinations. Hrs.	Min.	REMARKS.
May 30			60 c.c.		45	Admitted. Suffers with severe pain in bladder. Urine voided generally every half hour. Acid, pus and blood.
June 5	1	80	60 c.c.	1	10	Systematic dilatation begun. Thompson's fluid, four times daily, given by patient himself.
" 8	3	110				
" 10	5	130	90	2	5	
" 18	13	160	120	2	35	Almost free from pain. Feels greatly improved.
" 23	18	180	160	2	55	
" 27	22	195	180	3	30	Cystitis greatly improved. Diarrhœa and pain in prostate pretty bad. Feels greatly relieved. Discharged to continue treatment at home. One month later wrote that he was doing well—nothing heard since.
						The symptoms of painful and frequent micturition are entirely relieved. Nothing more than alleviation could be expected.

CASE III.—G. L., aged 28, Old Pott's disease, cystitis six years' duration. Urine voided every 30 or 40 minutes. Bladder contracted, holds

only 60 c.c. Urine acid, much pus and blood. Chronic diarrhea with mucous and blood, very tender rough prostate. Reacts to injection of tuberculine. (Probably has tuberculosis of prostate and intestine, manifestly little hope of permanent relief.) Forced dilatation without catheter was followed by surprisingly satisfactory results, as shown in table.

CASE IV.—G. B. CYSTITIS, FOURTEEN YEARS' DURATION.

DATE.	Day of Treatment.	BLADDER CAPACITY. Largest am't held on forced distention.	URINE. Largest am't voided at one time.	INTERVAL. Longest time between two urinations.		REMARKS.
		c.c.	c.c.	Hrs.	Min.	
May 3			20		15	Admitted. Severe pain in bladder and penis. Urine filled with blood, pus and mucus. Strongly *ammoniacal*. Wears rubber urinal. Has voided urine every fifteen minutes for two years.
" 5		22	20		15	Dilatation begun every four hours. Thompson's fluid.
" 8	3	50	20		18	Injected with tuberculine. No reaction.
" 15	10	94	40		25	
" 21	16	115	70		45	Improvement has been rapid. Pain entirely gone. Appetite ravenous. One irrigation, silver nitrate, 1 to 400, daily, followed by Thompson's fluid
" 29	25	130	105	1	10	Urine *acid*. Very little sediment.
June 10	37	170	120	2	10	No blood.
" 20	47	190	155	3		Urine acid.
" 29	56	250	190	4	25	Feels like a new man. Can now walk about town for four hours without desiring to urinate—is entirely free from pain. Urine is almost clear. Acid in reaction. Discharged to continue dilatation at home.
July 15		225	150	3	35	Home treatment. Lost ground
" 21		275	190	3	30	while travelling.
" 29		340	260	5	30	
Aug. 9		370	260	6		
Sept. 30		365	280	4	30	There is still some pus in urine, but patient feels perfectly well.

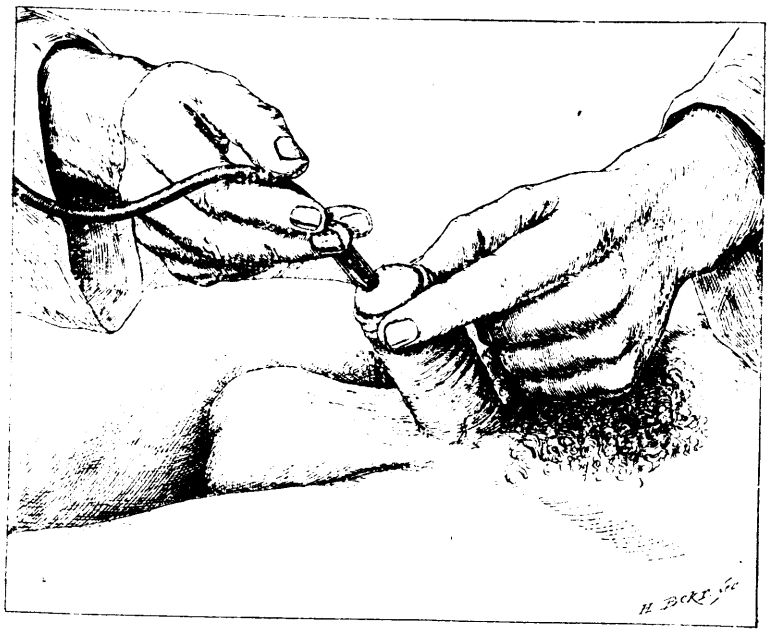
CASE IV.—G. B., aged 40, chronic cystitis (following gonorrhea), of fourteen years' duration. Great frequency of micturition, has voided urine every ten to fifteen minutes for two years, both day and night. Wears a urinal by day. Suffers severe pain in bladder, incapacitating him for work. Is perfectly miserable. Examination. Bladder holds only 20 c.c. naturally, and on forced painful distention only 22 c.c. Prostate not enlarged. Urine strongly alkaline, large clot of mucus, also blood. Table shows improvement under dilatation.

It is now five months since patient entered hospital with one of the worst cases of cystitis I ever saw. He is now devoid of all symptoms of cystitis except presence of pus, which is often present for years after apparent cure of cystitis.

When great intravesical pressure is exerted will any of the fluid pass up the ureters and thus cause dangerous infections of the kidneys? That this does not occur I have found by forcing nearly two quarts of a solution of methylene blue into the bladder of a cadaver, and find, on section, the ureters nowhere stained by the solution, while the bladder was a deep blue color. In none of the cases treated has there been any evidence of ascending infection.

It is easy to irrigate the bladder without a catheter through very tight strictures, and in cases of very large prostate. In a case of extra-dural abscess with tight stricture and very difficult micturition, I was able to dilate stricture considerably and greatly relieve difficulty of micturition by simple irrigations with hydraulic pressure of seven feet.

The possibility of benefiting an atonic bladder by alternate distention and evacuation—a form of massage, so to speak, for the weakened muscle, is shown in two cases, both recovering from paraplegia, one bladder distended and requiring catheterization, the other contracted and dribbling, both regaining power of voluntary control and power of expulsion after a few weeks' treatment.



Technique of Irrigating Bladder without Catheter.—Articles used: A fountain syringe with eight foot tube, a short conical nozzle. (Hynson & Westcott, Baltimore, have kindly offered to keep in stock the nozzles made for me.) A pole or other apparatus for elevating or lowering the irrigating bag, oil cloth and tin basin. Technique: Patient on back; oil cloth over bed or lounge; small basin between thighs. Take penis in left hand, retract foreskin, let fluid play on glans penis, then back and

forth in urethra to cleanse it. Then crowd tightly into meatus, holding penis behind corona between thumb and index finger. Raise bag to seven feet. When sphincter gives way and fluid begins to flow into bladder, lower bag to five feet, and (in cases of contracture of bladder), continue to force fluid into bladder until considerable pain is felt by patient, then withdraw nozzle and allow fluid to be voided. In most of my cases the patients conduct their own irrigations, often unassisted.

Solutions used: Bland fluids are most satisfactory. Thompson's fluid or boraci acid, two per cent. being the best, given four or five times daily, one quart each time. It is well to use once daily a stronger antiseptic solution, e.g., silver nitrate 1 to 500, or bichloride of mercury, 1 to 150,000, to be washed out by boric acid or Thompson's. No internal treatment except citrate of potash where urine is very acid.

The effect of forced dilatation is probably as follows:

The individual bundles of contracted fibrous tissues are separated or loosened, allowing increased vascularity. Folds and pockets of mucous membrane are smoothed out, irritating secretions washed away. Ulcers are stretched and cracked as external ones are by scarification, allowing new blood vessels to grow out. The bladder muscle is exercised, its tone restored. The mucous membrane cleaned, stretched and newly vascularized, is given a chance to throw off the inflammation.

One of the most striking features of the treatment is the rapidity with which they improve. Pain present for years may disappear in a few days, pus and mucus rapidly decrease, and strongly ammoniacal urine may become acid in a short while. The relief afforded makes them the most grateful patients I have ever seen. And yet, one of the latest text-books on Genito-Urinary Surgery says: The theory that the capacity of an inflamed bladder can be increased by dilatation is contrary to physiology and anatomy. To attempt by forced injections to relieve frequent micturition cannot be too strongly condemned.

NEURALGIA—

℞ Menthol,
Guaiacol ..... āā 1
Spt. vini rect. absol 18
M. S. Apply on cotton two or three times daily.

VAGINISMUS AND VAGINITIS—

℞ Ol. eucalypti ..... ℥ iij.
Ceræ albæ,
Olei theobromatis ..... āā ad ℥ iij.
M. Div. in supposit. No. iv. (bougie-shaped).

—LUTAUD, *Jour. de Méd.*

THE WAR AGAINST TUBERCULOSIS IN PARIS.

BY EDWARD CONNER.

The Paris Congress recently held on the subject of tuberculosis, phthisis, or consumption has not very much advanced any definite solution for this terrible disease. But there has been no putting back of the best trend we know for dealing with the malady—the persistent application of hygienic rules. That is the scientific study of the problem. The disease is widespread, and as infinite in its diagnoses as the afflicted themselves. At present climate enters as an important factor in the treatment of consumption, that is to say, of the action of pure air and light, as well as compliance with a treatment based on the results of such an acquired experience. It is upon these principles that the sanitoria now springing up on the continent in elevated districts have been founded. Not that sanitoria cannot be established in the plains, if the exceptional conditions be secured and followed up. Indeed, in Germany the sanitoria were commenced upon the lowlands, when the question naturally suggested itself: "Why not try the quieter uplands, which are freer from fogs, mists, low air currents, and a heavy percentage of atmospheric impurities?" Hence the origin of treating tuberculosis by altitude, that is, at heights between 1,400 and 2,000 yards above the level of the sea. The results have been very encouraging, but do not as yet constitute a perfect cure. The method has enabled us to measure facts, as well as to study the action of mountain air on the organs, to note if all the organisms are affected in the same manner, and ought they to submit to the same treatment.

All medicated substances, all therapeutic methods applied to tuberculosis appear to have failed so far. Science, by antiseptics to render the constitution refractory to the development of the bacillus, has yielded no precise result. We still await the medicament which without destroying the organism will attack the pathogenic microbe in the recesses of the tissues, or the serum that will oppose its invading march, render it inoffensive, and eliminate it from our system. France has three sanitoria for the treatment of tuberculosis — Berck-sur-Mer, Villers-sur-Marne, and Ormesson. The latter is viewed as the model establishment; it is situated at nearly twenty miles from Paris, belongs to the municipality, and is the place where tuberculous children aged from 3 to 12 years are sent to be treated. It can accommodate 120 patients. But it is situated relatively in a plain. The establishments of Ruppertshain, near Frankfort-on-the-Main, and of Davos and Heiligenshuendi, belonging to Basle and Berne in Switzerland, are recognized as the typical sanitoria. Consumption in its first or early stage holds out every chance of being successfully treated, but later developments of the disease are hazardous. Further, no sanitorium accepts incurable cases. Under these unlike conditions, it is difficult to draw a common conclusion. One feature is peculiar to all the consumptive establishments, they are worked upon hygienic principles, be their

altitude high or low. Ormesson is in the plain of Paris, and its director, M. Blache, recently communicated to the Academy of Medicine, that 42 per cent. of the children admitted were cured, having received no other medicaments but healthy food, the advantages of the purest air, and hygienic accessories.

Near Frankfort-on-the-Main is the Ruppertshain establishment—the rich model of the sanitoria. Its altitude is 418 yards above the sea level. The bedrooms allow 44 cubic yards of air per patient, contain 1, 3 or 5 beds; are situated in the front of the building, while the latter has a S.S.E. aspect. The beds are in iron; the windows which have Venetian shutters are kept partially open at night, and fully so all day. The patients from 7 a.m. to 9 p.m. remain in a common hall or gallery called the Liege-Halle, which is kept wholly open to the fresh air, but which not the less excludes draughts. Steam heats the premises, and petroleum supplies the light. The water-closets are worked by peat and are daily emptied, the contents of which are used to fertilize fields; the slush water and drainage are disposed of similarly. A steam stove disinfects. The charge for treatment per inmate is 3 to 5 shillings per day; while the actual cost is about 2s. 8d. Some of the admitted were cured, that is, freed of their bacilli; others were ameliorated or relieved, while not a few were declared to be hopeless. After five per cent. of the profits are paid to shareholders, the remainder is handed over to support a kindred institution close by for the indigent. The other establishments, it may be said, are conducted on the same lines. That of Davos in the Haute Engadine is 1,760 yards above the level of the sea; it is well sheltered and picturesquely situated. It receives 100 patients. The sleeping rooms accommodate 1, 2 and 4 beds; 44 cubic yards of air are allowed per bed, in other cases but only 31. There are no fireplaces. The soiled articles are gathered in zinc receptacles. The minimum sojourn is thirteen weeks; the expense per day, 2, 3 and 5 francs. Baths are occasionally employed, but very cautiously. The inmates spend all their day on long easy chairs under a verandah—Liege-Halle facing the south.

The Heiligenshuendi establishment is situated at an altitude of 1,276 yards. It differs in a few details. Its sleeping rooms never contain more than eight beds made in unvarnished wood; 30 cubic yards of air are allowed per bed. The price of residence varies from $1\frac{1}{2}$, $2\frac{1}{2}$ to 4 francs per day, the duration of the residence is limited to two months. Milk enters largely into the dietary of the patients; the inmates undergo morning frictions, and take a lukewarm bath weekly. The only medicament employed is creosoted cod liver oil. The patients are supplied in winter with skin-sacks, also with impermeable *galoches* or clogs, so as to enable them to keep in the open air and promenade on the snow. They receive specially disinfected pocket-handkerchiefs, but if they expectorate elsewhere than in their own portable, or the general *crachoir* or spittoon, they are fined 2 francs for every offence committed. Only those in the first stage of consumption have, if not been cured, relieved. In all the institutions, the Liege-Halle, or common verandah, where the day is passed, ought to be made gay and attractive. Each patient is

given a long chair on which to rest, at his side is a small table, intended first for the spittoon, and also for books or materials for work. The basis of the amelioration rests upon arresting the spread of disease germs inside the building, and in diminishing them in the surrounding air of the sanitorium. The means are natural, and include the destruction of the expectorations, disinfection of all that is infectious, the effective organization of the sewage, and fortifying the patient to resist and combat the lamentable malady. In some cases where milk diet is relied upon, the cows are changed every six months.

The *crachats* or expectorations are viewed as the chief agents of contagion. It was in 1869 that Villemin first showed and demonstrated the poisonous character of the expectorations of consumptive persons, even when in the dried state; as in the latter case, the virus or bacillus was only in a state of suspended animation. Tappenier confirmed these facts experimentally in 1877 at Munich. In the sanitoria there are three classes of spittoons; those at stated places throughout the building; those in the bedrooms, and those carried in the pocket by the patients. All are daily cleansed with boiling water, while a solution of lysol in soap-water is therein left to prevent the matters drying in the vessels. The regulations are drastic respecting the use of these spitting boxes. The æration of the rooms is very important; even at night a portion of the upper part of the windows is always left open. At Ormesson the windows are ingeniously contrived, so that they can each open into five distinct parts. In 1892 the deaths in Paris were 21·40 per 1,000 inhabitants; they have since fallen to 19·62; but the deaths from consumption remain proportionally oscillating between these two rates. Pulmonary consumption alone caused one-seventh of the deaths. In the medical report on the State of the French Army, just published, it is stated that one-fifth of the deaths is due to some form of consumption. On detecting the first symptoms of the malady, the soldier is at once sent back to his family, to be cured by means of fortifying food, fresh air, isolation and the adoption of hygienic rules. When convalescent he rejoins his regiment. Upon 10,000 adults, aged from 20 to 45 years, pulmonary consumption destroyed 600.

Statistics attest that 500,000 tuberculous persons exist in France, so the death harvest is always great. Except as an academic question, no marked attention is given as to consumption being hereditary. It is to attack the scourge, diagnosize its early existence, and strengthen the constitution against the attacks of the ailment that characterizes the trend of science. Persons by their professions or trades, as in public offices, workshops, etc., are liable to consumption; they are forced to inhale the same air and the dust from dried spittle. Vigilant attention should be given to dietary. The bacillus of consumption can only be killed by a temperature of 158 degrees Fah., hence the danger of undercooked meat. As regards milk, no matter how pure may be its origin, it ought to be boiled. It is the most fruitful source of consumption in the case of children. Veterinary Professor Nocard would have suspended in every school room a notice reminding children that uncooked or unboiled milk promotes death. The breath of consumptive people does

not contaminate, although Heller alleges that a patient in the fullest period of consumption gives off *7 milliards 200 millions* daily of bacilli! In the sanitoria neither the physicians nor the attendants contract the disease; but they are robust, so are in a position to resist the terrible malady. Cases of cured patients do occur, but we do not well know why, or the exact conditions of the happy change. In the rural districts, consumption is constantly cured without any special treatment. Climate, whether at low or high altitude, is an important factor in the evolution of the disease, as is evident where so many persons submit with benefit to a common *régime*, though possessing different constitutions. Invigorating air, fortifying food, disinfecting, an hygienic *milieu* or surrounding, and attacking the malady in its initial stages are all the weapons up-to-date which science possesses to combat the scourge with prospects of success.

PNEUMONIA IN CHILDREN.

Pneumonia in childhood has of late been deeply occupying the attention of pediatrists, and without doubt much good has been effected by the interchange of opinions, and by the ventilation of the subject generally. At the meeting called together by the chairman of the pediatric section of the New York Academy of Medicine, many points in connection with the treatment of the disease were made clear which, up to that time, had been decidedly misty. When the fact is considered that pneumonia is one of the most deadly maladies to which children are prone, it cannot be denied that the time had come for a certain consensus of opinion to be arrived at in regard to its treatment. But before touching on the subject of treatment, it may be as well to refer briefly to the light that has been thrown on the etiology of the disease by means of the researches of bacteriologists. This phase of the matter has been extremely well set forth in an article contributed to the Edinburg *Journal*, of August 26th, by Dr. James Carmichael, physician to the Edinburgh Royal Hospital for Sick Children, who says: "Bacteriology has contributed largely to our knowledge of the disease. The rôle which micro-organisms play in the disease is certainly a very important one, as without doubt the toxemia resulting from their growth and development would appear to be not only the main factor in the production of the constitutional symptoms, but often the principal cause of danger to life. Recent bacteriological investigation shows that quite a number of organisms are found associated with this disease. Netter gives the bacteriology in forty-two cases—in twenty-five primary cases. Friedlander's capsuled coccus or pneumobacillus was found in ten; streptococcus in eight; staphylococcus in five; Fränkel's capsuled coccus in two. In seventeen of the cases there was mixed infection thus: In five pneumococcus and streptococcus; five streptococcus and staphlyococcus; three streptococcus and capsuled coccus; two pneumococcus, streptococcus, and staphlyococcus; one pneumococcus and capsuled

coccus. Mosny and Netter both agree that in cases marked by lobular distribution, streptococcus was usually met with alone or with pneumococcus; whereas those in which the distribution was lobar, catarrhal and fibrinous variety combined, one or other of the forms of pneumococcus, either Fränkel's or Friedlander's organisms, were generally found alone. Other investigators who have studied the different forms of pneumonia have arrived at the conclusion that it is no one organism that causes the disease, but two and sometimes more. Thus plainly proving that the pneumonia of childhood cannot be regarded as a specific disease, seeing that various organisms produce the pathological changes in the lung tissues." The foregoing may be said to be a short, up-to-date presentment of the germ theory of pneumonia in children, and would appear in the main correct. The next forward step, then, is to discover a really reliable antitoxin, but until this is done we must ourselves sift the different modes of treatment at present practiced, and learn from the experience of others in order to arrive at a satisfactory conclusion. At the meeting of the pediatric section, referred to above, some definite opinions were expressed, and from the views of the majority of the speakers we can form our own judgment as to the most beneficial and widely practiced methods of treatment. For example, it was agreed on all hands that rest and complete isolation is absolutely necessary; that careful nursing is one of the most important considerations; and the opinion was unanimous that effective ventilation is essential. The meeting was opposed, on the whole, to the active use of drugs, and few voices were raised in favor of stimulants, while hot poultices were condemned *in toto*. On the question of bathing, opinions differed most widely. Not, however, so far as the beneficial effects of baths themselves are concerned, but with respect to their temperature. Some advocated baths as high as 100 F.; others deemed 70 F. a heat better calculated to produce the wished-for results; while one speaker advised the employment of the wet sheet cooled by ice. The large majority of the speakers deprecated extremes of either heat or cold, but recommended the adoption of a middle course. To refer again to Dr. Carmichael's article. In very severe cases with much cyanosis, he suggests the inhalation of oxygen, the small patient lying under a tent, and states that in many cases he has known the treatment to be of signal benefit. In infantile pneumonia, many physicians in Great Britain assert that belladonna acts like a charm. There would, however, seem to be some diversity of views in this country and Great Britain as to the efficacy of the drug treatment of pneumonia in children. The judgment of medical men here, as evidenced by the expression of their opinions at the meeting of the pediatric section, is distinctly against active medication. In Great Britain, on the other hand, the conservative treatment still, to a large extent, holds sway. As, however, the study of children's diseases as a specialty has been more closely and for a far longer period pursued in America than in the United Kingdom, we may claim—without laying ourselves open to the charge of undue presumption—to be more fitted to pass an authoritative opinion on the matter. The pediatric section deserves the thanks of every medical man for the able manner in which the whole subject was placed before them.—*Pediatrics.*

THE OPERATIVE TREATMENT OF INTESTINAL PERFORATION IN TYPHOID FEVER.

This subject is one which interests the physician and the surgeon to an equal degree and deserves careful study by both, since in some cases life can be saved by prompt action.

There are no more interesting studies in medicine and surgery than those advances which meet conditions heretofore considered beyond relief, and there are few conditions more terrifying to the physician and to the patient's friends than perforation of the bowel in typhoid fever. Theoretically, at least, it would seem that with the progress which has been made in abdominal surgery operative interference is beyond all doubt the chief possibility for the recovery of the patient, yet as a rule both physicians and surgeons have in the past felt timid about restoring to so grave a surgical procedure in the face of the profound exhaustion of the patient from disease. In this connection the statistics which have been recently collected and published by Keen give us clearer ideas of our duty under these circumstances than any others with which we are acquainted. One of the first points impressed upon us by these statistics is that delay is an exceedingly dangerous thing. Thus, as Keen points out, of the sixty patients operated on for perforation of typhoid fever, 26.7 per cent. recovered when the operation was done within twelve hours; whereas the mortality was total when as long as twenty-four hours had elapsed, except in three instances, in one of which the operation was done twenty-six hours after perforation and the other two between two and three days. As a result of these statistics Keen enunciates the law that if operation is not done within about twenty-four hours after the perforation there is practically no hope of recovery.

It is stated in *La Presse Medicale* of May 18, 1898, that Guecehewitsch and Wanach have recorded five instances in which Russian surgeons have operated for intestinal perforation. In 1891 Netschaieff and Troianoff operated upon a man aged thirty-one years, who presented signs of perforation. The operation was practiced six hours after the entrance of the patient into the hospital. Marked evidence of serious peritonitis were found and fecal matter was in the peritoneal cavity. Resection of the perforated portion was performed. Death followed and autopsy revealed typhoid ulcers in the ileum. In 1893 the same authors operated upon a man of twenty-eight years, who presented similar symptoms. On entering the hospital a diagnosis of the ambulatory form of typhoid fever was made, with intestinal perforation. The operation took place seventeen hours after entrance. A general sero-purulent peritonitis was found, the fluid being filled with fibrinous flakes. Quite a large perforation was present; four centimeters of the intestine was excised. The abdominal wall was not immediately sutured, but the opening in it was packed with sterile gauze, and complete recovery followed.

A third case was that of Kohlzoff and occurred in a man of twenty-four years who had typhoid fever and congestion of the lungs. He had symptoms of perfortion with excessive fever. The operation was per-

formed four hours after the perforation. Sero-sanguinolent fluid was found in the peritoneal cavity, and twenty centimeters from the ileocaecal valve there was a perforation. A resection of the perforated portion of the intestine was performed. Death occurred in two days. At the autopsy numerous typhoid ulcers were found near the point of ulceration.

In the fourth case, belonging to Trianoff, a patient twenty-nine years of age had been sick fifteen days with fever. He was seized with violent pain in the belly followed by intense chills, vomiting and hiccough. There was abdominal swelling and general pain. The symptoms were those of perforative peritonitis. The operation began sixteen hours after the accident. Abundant sero-purulent fluid was found in the abdominal cavity and perforation of the intestine had occurred ten centimeters from the ileocaecal valve. Resection of the perforated segment was performed and death occurred fourteen hours afterwards. The autopsy revealed typhoid ulcers in the ileum.

In addition to these cases Guecehewitsch and Wanach report five more. The first of these was a man thirty-six years of age, who had had typhoid fever fifteen days. After eight days he had had bloody stools, violent pain in the belly followed by intense chills, vomiting and hiccough. The belly was swollen and the pain was general. The pulse was 120, the temperature febrile. An operation was performed two hours after the perforation. On exploring the intestines two perforations were found, one two centimeters in diameter, the other much smaller. Twenty centimeters of the intestine was resected, and death followed in about two hours.

At the autopsy ten ounces of fetid pus was found in the belly. The parietal and visceral peritoneum were covered with punctiform hemorrhages. The part of the intestine resected was thirty-seven centimeters from the caecum.

Their second case was a man of twenty-four years, who had been ill some time with typical typhoid fever. Seven days after entrance into the hospital he was seized with violent chills and fever, and all the symptoms of perforative peritonitis. The operation was done seventeen hours after the accident, ether being given after a preliminary injection of cocaine. Perforation of the intestine was found. The mesenteric glands were enlarged and were adherent to the intestine in places. Thirty centimeters of the intestine was resected. Death occurred in six hours after the operation. The autopsy revealed profound typhoid ulceration at the lower extremity of the ileum. There were also signs of catarrhal pneumonia.

The third case was in a young man of nineteen, who had been sick five days. His fever was high and he had bloody stools. Four weeks after his entrance into the hospital he had perforation of the intestine. His condition remained grave, and on opening the peritoneal cavity it was found to be filled with bloody fluid and there were intestinal adhesions. Death occurred in three days. Again the autopsy revealed perforation and ulceration.

A man of twenty-seven presented mild symtoms of typhoid fever. Six days after his entrance he was seized with violent pain in the belly and

with chills and sweating. There was also meteorism. Twenty-four hours after these symptoms the operation was performed. Again the belly was found filled with sero-purulent fluid. Thirty centimeters of the intestine was removed and contained four ulcers. Notwithstanding injections of saline solution, the patient died eight hours after operation. Again the autopsy confirmed diagnosis.

In the fifth case a man of twenty-nine entered on the seventh day of typhoid fever; six days later violent pain in the caecal region came on with moderate fever. Surgical intervention took place thirteen hours after the accident. The abdominal cavity was filled with serous fluid. The walls of the intestine were edematous. Resection was performed. Death occurred in three days. The autopsy revealed the characteristic lesions and pneumonia of both bases of the lungs. Altogether these authors quote seventy-one instances of perforation in the course of typhoid fever, with seventeen recoveries. The number of deaths in operation for peritonitis in typhoid is necessarily high.

In regard to the time for intervention, it is evident that much depends upon the promptness with which the surgeon proceeds to the relief of his patient, and it would seem that good results are apt to follow only in those cases in which the intervention is immediate or where nature has protected the peritoneum by inflammatory exudations which cause a limited peritonitis. In regard to the anesthetics which may be used in these cases, these two Russian surgeons believe that either chloroform or ether is satisfactory, provided the myocardium, the lungs, the liver, are in fair condition. In other instances they think that mixed anesthesia is well. They produce local anesthesia by cocaine and find that smaller doses of chloroform and ether are needed under these circumstances. Washing out of the peritoneal cavity in these cases is of the greatest possible importance, normal saline solution being employed.—*The Therapeutic Gazette.*

CHILDREN'S EMETIC (six to ten years)—

℞ Pulv. ipecacuanhæ ..... gr. viiss,
Antimonii et potassi tartratis ..... gr. $\frac{1}{6}$.
Oxymel scillæ ..... ℥ iiss.
Aq. dest ..... q.s. ad. ℥ i.

M. S. One teaspoonful every ten minutes until vomiting occurs.

—BAGINSKY.

ACUTE COLIC—

℞ Tinct. opii deodorat ..... ℥ i.
Chloroformi ..... ℥ iss.
Camphoræ ..... gr. iv.
Ol. cajuputi ..... ℥ i.
Aquæ ..... ℥ ij.

M. S. One teaspoonful every hour.

THE TREATMENT OF INCONTINENCE OF URINE IN CHILDREN WITH THE LIQUID EXTRACT OF RHUS AROMATICA.

In a recent issue of *Treatment* we find that Freyberger has used this drug with great success. He gives us a brief summary of the thirty cases of enuresis which he has treated with rhus aromatica.

In all cases spoken of as "cured" at least nine months have elapsed since enuresis had occurred for the last time.

Of the thirty patients treated with rhus aromatica, twelve were boys and eighteen girls; their ages varied from 3 to 11½ years.

At the time when treatment was begun one child suffered from anemia, two from rickets, one from rheumatism, two from chorea, five from morbis cordis, five from large tonsils and adenoids, one from somnambulism, one from pulmonary tuberculosis, and one was microcephalic; while in eleven children no concomitant affection could be found.

One boy suffered from diurnal enuresis; five boys and fifteen girls presented the combined (or continuous) form of enuresis.

The average duration of the treatment was forty days—thirty-five days in boys and forty-five in girls.

The first signs of improvement occurred on an average on or about the seventh day of treatment; the earliest on the third, the latest on the twenty-third day. Thirty-three days on an average were sufficient to produce a permanent cure, fifty-three days to effect a permanent improvement.

Eleven boys and seven girls were permanently cured; one boy and nine girls were permanently relieved; in two girls no improvement could be achieved. A relapse occurred in three girls after an interval of some months.

A temporary exacerbation of the enuresis was noted in eight cases, three boys and five girls; it occurred during or toward the end of the first week in five cases, and during the second week in three cases. While this exacerbation lasted the patients not only wetted their beds two or three times every night, but the quantity of urine passed into the bed each time was considerably increased. This interesting, though somewhat unpleasant, phenomenon lasted from four to six days, and in all cases terminated rather abruptly. During this period of flooding the urine was always very pale; its specific gravity varied between 1002 and 1007. Considering the great disappointment which parents must necessarily feel at this apparent change for the worse, the author made it a rule to tell the parents beforehand that such a recrudesence might possibly occur, but that it would not last long, and in all probability would soon be followed by a decided improvement.

It would be rash to claim for rhus aromatica the qualities of a specific in the treatment of enuresis in children as long as our knowledge of this drug and its action is based upon the results observed in barely 100 cases on which reports have been published; but so much may be said in its favor that it appears to be as efficacious as belladonna, that it may be given for a long time without the slightest ill effect, and that good results may be obtained with it where belladonna proves ineffective.

The astringent taste and disagreeable odor of the liquid extract of rhus aromatica are sufficiently disguised by syrupus aromaticus.

The dose employed was: Five to ten minims for children two to five years old; fifteen to twenty minims for older children.

A very convenient formula is the following:

℞ Ext. rhois aromatica fl., 10 minims.
Syrup. arometici, 20 minims.
Aq. distillate. ad 1 drachm.

Sig.—This amount to be given three times a day.—*Therapeutic Gazette.*

NEURASTHENIA.—Etiology.—The disorders of woman's pelvic organs have no more to do with her nervous and mental diseases than lesions elsewhere in her body; indeed, they have less to do with her psychoses and neuroses than most of her other organs, for, as in the male sex, the chief causes of their neuropsychoses are to be sought in intrinsic disorders of the nervous system itself, or in perverted nutrition of the nervous system dependent upon affections of the gastro-intestinal tract, kidneys, liver, lungs, heart, etc., and upon pathological blood states. It is true that puberty, adolescence, the puerperium, menstruation, and the menopause are often closely related to the outbreak or to the exacerbation of many nervous and mental disorders, but the pelvic organs themselves play but a small rôle in these physiological commotions. They have to do with the whole organism of woman. It is not denied that pelvic diseases in women attended by exhausting pain may give rise to neurasthenic and hysterical states, but the influence of exhausting pain in these organs is no greater than similar exhausting pain elsewhere in the body. Nor is it denied that disorders of the female organs which affect the nutrition of the nervous system, such as excessive hæmorrhage, or suppurative processes, may be important factors in inducing functional neurosis and even insanity, though disordered blood states brought about by pelvic disease are very infrequent as compared with disordered blood states dependent upon disease elsewhere. There is no evidence whatever to support the opinion that insanity was ever due to a mere reflex influence from pelvic disease. In insanity the two great etiological factors are hereditary instability and some physical or moral stress directly affecting the nervous system. There has never been brought forward any evidence whatever to show that either epilepsy or chorea can be induced by disease of the female organs. Frederick Peterson (Annals of Gynecology and Pediatry, Aug., '98).

HEADACHES—

℞ Sodii brom.....3 i.
Phenacetin.....gr. xxx
Caffein. citrat.....gr. xviij.
Sodii bicarb.....3 i.

M. et. ft. chart. No. vi. S. One every fifteen minutes till relieved, to be followed by a Seidlitz powder.

—DR. M. STALLER.

HYDROTHERAPEUTICS: A BRIEF HISTORY OF THE SUBJECT.

When we think of the many effects which can be produced on the various functions of the human organization by the application of water at different temperatures and in different forms, and of the many centuries during which water has been made use of as a most valuable remedial agent, though in but a limited measure, it appears remarkable that it is not now of much more general application. Modern medicine is apparently about to develop and establish its great value in the treatment of most forms of disease.

It is worthy of note, and a sign of the times, that the universities of Vienna, Heidelberg and Wurzburg have had for some time their scientific hydrotherapeutic institutes, and the science and art of hydrotherapy has had its place in the medical curriculum of the schools. In connection with the Berlin University a like institute has just been established, near to and connected with the new Charité Hospital.

Doubtless the use of water as a remedy in regular medical practice has been kept in the background on account of its adoption by persons having no scientific medical knowledge—by quacks, in short. This has been the case with some of our most valuable remedies—as in super-respiration by means of lung gymnastics, for example. The profession, it is to be feared, has been too backward—too conservative in this respect.

To be sure, in general practice the use of water is in many cases much more difficult than drug prescribeing. This has, doubtless, contributed to delay the general application of the remedy.

Hydrotherapy, notwithstanding, has gradually, slowly, but surely, epoch by epoch, as it were, worked its way up. We know but little about it previous to the time of Hippocrates. It was probably used by the Assyrians and Egyptians, as well as by the Israelites, for something more than the purposes of cleanliness. And three thousand years ago Homer wrote that Hector's wife prepared the warm bath for the refreshment of her husband on his return from Troy.

> ....."Not yet the fatal news had spread
> To fair Andromache, of Hector dead.
> . . . . . .
> Her fair-haired handmaids heat the brazen urn,
> The bath preparing for her lord's return."

Rules for the treatment of disease by water were laid down by Hippocrates, which are still practised by both physicians and quacks. Asclepiades, though not possessed of much medical knowledge, performed "miraculous cures" in Rome by baths, chiefly, with a judicious diet and massage. So freely did he practise the water treatment that he was dubbed "Psychrolutus." He founded the school whence sprung Themison and Celsus. Musa, who cured Augustus by the vigorous use of cold baths, was a pupil of his. And so grateful was the emperor that he had a statue erected to Musa. The "Latinorum Hippocrates," Celsus, used water freely in his practice. So did Aurelianus, who was the first to pre-

scribe the wet abdominal compress for hypochondriacs. Galen was an advocate of water treatment, and first used cold to the head with the body in warm water. Through the many dark, and in many respects hydrophobic, centuries which passed after Galen, comparatively little is known of the history of medicine. England's Hippocrates, Sydenham, practised much as did the father of Greek medicine, and assisted nature in removing morbid or noxious products from the system. A few years after him Sir John Floyer published a history of cold bathing which created an epoch in hydrotherapy. The book passed through many editions, was translated into German, and was the cause, it is said, of making this practice eventually more popular on the continent than in England; the practice being adopted into the Vienna hospital. Blair and Cheye were advocates of hydrotherapy, and the illustrious Hoffman was the first to recognize the use of cold water as a tonic. Theden, surgeon of Frederick the Great, was the first to use it in fevers, smallpox and rheumatism. The work of the illustrious Currie, published in 1797, first placed hydrotherapy on a scientific basis. Later, the philosophic Hufeland offered a prize for the best treatise on the action of cold water in fevers, determined by thermometrical study.

The "water cure" was made more popular than ever before by the German farmer, Vincens Priessnitz, who enlarged his farmhouse to receive patients; who in 1840 had treated over 1,500 patients; and in 1852 had amassed an immense fortune. A copious literature sprang up, monuments and fountains were erected to his memory, and physicians from all countries, who had been attached to his mountain home, became converts to hydrotherapy.

Magendie and Fleury explained their clinical success with water on true physiological principles. And, later, Brand introduced his fever treatment, as now largely practised.

Scoutetten, a French physician, after studying hydrotherapy in Germany, reported that "The numerous cures it has wrought recommend it, and it lies in the interests of humanity and medical science that its practice in Paris take place under the eyes of able physicians."

Niemeyer, in his work on practice, says: "A series of cases are on record in which complete and perfect cures have been obtained by it after all other methods of treatment had been applied in vain."

Professor Peter, in his preface to Duval's great clinical work on this practice, writes: "Hydrotherapy suffices in most cases of disease; added to other treatmet it is a most powerful auxiliary."

And Professor Erb, in Ziemssen's cyclopædia, writes: "To the most important and most active agents in the therapeutics of our field" (nervous diseases) "belong cool and cold baths—the application of cold water in the most varied forms; that which is usually termed cold water treatment. Having been in recent times practised more rationally and studied more exactly, it has attained remarkable prominence."

With all this, and much more, does not hydrotherapy seem worthy of a special chair in our medical schools?

THE PRESENT STATUS OF OPINION UPON THE USE OF QUININE IN MALARIA.

BY H. A. HARE, M.D.

Professor of Therapeutics in the Jefferson Medical College, Philadelphia.

The return to this country of large numbers of soldiers affected by malarial disease, and by the prospect of colonization of certain tropical countries by citizens of the United States, have naturally caused much interest in malarial fever, and in the æstivo-autumnal parasite in particular. Physicians in the North have suddenly developed an extraordinary degree of interest in a subject which their Southern brethren have long considered of vital importance, and in consequence have studied it with considerable zeal, so that many of them have arrived at definite views as to the matter in debate.

With these introductory remarks I proceed to a friendly criticism of a special article in the *Medical News* of December 17th, 1898, by an anonymous writer.

In this article the value of quinine as an anti-malarial is discussed, its praises sung, and then the writer sets his spear and proceeds to charge valiantly into the ranks of those who have the temerity to believe that quinine, like every other drug, has limitations as to its usefulness in malarial disease, and that it is given recklessly and in unnecessarily large doses. This writer also states that "there is in the air a spirit of opposition to the drug which is liable to do a good deal of harm." If this is true, it is unfortunate, for no one can deny that, so far as the infecting organism is concerned, quinine acts as a specific.

On the other hand, it is certainly a fact that quinine has been shamefully abused in malarial fever, that it is often given in excessive doses and in cases in which its use is contraindicated, and finally, because the practitioner has been led to believe that "where is malaria there should be quinine," he has been led to prescribe it without studying the case thoroughly, and therefore has failed to find that its use is sometimes unwise and that the condition is sometimes not really malaria at all.

The objection to the paper we have quoted is not that it urges confidence in quinine, but that it urges its universal use, with disdain for those who recognize its limitations. Thus that part of the article dealing with hæmaturia seems to indicate that the writer falls into the category defined by himself for the writer of an editorial in the *Journal of the American Medical Association*, namely, "one with but small experience with malaria, or perhaps none," since in the next sentence he proceeds to tell us that the voices of our Southern medical men, of the medical men of India and of Brazil and Italy have been as a unit in favor of the universal use of quinine. That this statement is anything but correct is shown by the fact that a very large proportion of these physicians have testified to the opposite effect. Thus, to take up the most recent literature, we find Goltmann and Krauss, the sub committee on pathology of the committee on malarial hæmaturia of the Tri-State Medical Associa-

tion, in a report published in the *Memphis Lancet* for December, 1898, telling us that they are "forced to the conclusion that, malarial hæmaturia once begun, quinine has no place in its therapy;" and, again, "the injudicious administration of quinine is often responsible for a hæmaturic attack." In *La Press Médicale* for December 3, 1898, Vincent informs us that American statistics demonstrate that the greater number of patients survive that do not receive quinine, and Netter thinks that the absorption of quinine plays an important part in the production of bilious hæmoglobinuric fever. In the *Therapeutic Gazette* for 1897, page 94, Dr. Meek, of Arkansas, protests "in the name of humanity" against the use of quinine in this affection; and many other references to papers in Southern journals during the last few years could be given, not all against the use of quinine, but the majority at least preaching care in its use and recognizing that it may do harm.

In this connection it is proper to point out that physicians elsewhere than in America have reached similar views, and Karamitsas, a Greek physician, has published in the *Bulletin Générale de Therapeutique* an interesting paper dealing with seven cases in which, in the absence of acute malarial manifestations and because of malarial cachexia, quinine produced hæmaturia whenever it was given, and further, these patients failed to have this symptom in acute attacks, if quinine was withheld, but suffered from bloody urine if it was used. Rizopoulos in Greece and Tomasel'i in Italy have also seen cases in which quinine would produce hæmaturia. In Guadaloupe Du Chassaing has reported such cases. Other cases have been recorded by Pampoukis and Chomatianos, of Athens, Greece, and also by Carreau.

In view of these facts, the statement in the article quoted, that Koch "started" the present reaction against quinine by stating that quinine was given too freely in African malarial fevers, and that it caused "blackwater fever," is scarcely correct. Whatever weight his views may have, he certainly did not "start" the reaction.

As long ago as 1892 the author of this paper became interested in this important question and made a collective investigation of the views of physicians living in those parts of the United States in which the mortality from malarial infection was greatest, namely, seventy per thousand or over, and reported the results to the Association of American Physicians.

While the views expressed by my correspondents were very antagonistic, I thought myself justified in stating that quinine is often useless and harmful in the bloody urine of malarial infection, although it was also evident that circumstances might exist in which the drug could be used. Much of the contradiction is more fancied than real, and depends upon the fact that the bloody urine may be due to many causes, such as acute renal congestion in the paroxysms owing to great distention of the renal vessels, to degenerative renal vascular changes as the result of chronic malarial poisoning, because of degenerative processes which cause the red cells to disintegrate, and finally to paroxysmal hæmoglobinuria not due to malaria.

It is evident, therefore, that quinine might be useful in one case with

bloody urine and not in another, and the burden of this article is not to prove that quinine is never useful, but that it is not a "cure-all" in these states. That it may do damage is proved by the authorities quoted, and by the following facts that show, I think, that my friend who wrote the editorial in the *Journal of the American Medical Association*, who ever he may be, is not so ignorant as the *Medical News* would have us believe.

That malarial poisoning does cause nephritis in certain cases is admitted by every one, and Thayer tells us that in Baltimore tube-casts were found in the urine of 17.5 per cent. of the malarial cases, and Osler says that albuminuria was found in 46.4 per cent. of his cases in the wards. If this is true of a point so far north as Baltimore, it probably holds with greater force for those places where the malarial poison is still more virulent. Atkinson has shown that nephritis is a sequel of malarial infection; the committee of the Tri-State Society of Alabama, Tennessee and Mississippi has found nephritis in all cases of fatal malarial hæmaturia; Ralfe has done likewise, and Kiener and Kelsch have reported that there is glomerulitis.

Admitting, then, that malarial disease produces changes in the kidneys, let us see if quinine is capable of so doing. We find that all writers of experience state that quinine, particularly in full doses, possesses distinct irritative effects on the genito-urinary tract, and I have proved that in poisoning by quinine the kidneys become congested and finally inflamed.

Guyochin has reported cases of genito-urinary irritation after the use of quinine, and Faginoti reports a case in which there were pain in the urinary passages and the discharge of a few drops of blood on urination. Monneret has seen positive hæmaturia follow its use, and Rivet has observed vesical spasm and hæmaturia after an ordinary dose of the drug. Dasset reports the development of hæmaturia, with retention of urine, from cystic irritation due to quinine, and Cachere records two cases in which hæmaturia followed the use of quinine. In one of these, a boy of thirteen had profuse hæmaturia after the dose of ten grains, and a girl of seven years was affected similarly whenever quinine was used. Stillé states that quinine irritates the urinary organe, and that if any part of this tract is diseased the lesion is aggravated.

Three facts may therefore be deducted: (1) That quinine sometimes produces hæmaturia in malarial disease; (2) That malarial disease often congests, irritates, or inflames the kidney; (3) That quinine is capable of doing likewise.

This paper so far, has, doubtless, seemed destructive to the use of quinine in malarial nephritis and hæmaturia, but it is not to be regarded as advocating that no quinine be given; rather that it be given wisely. It must be evident that hæmaturia coming on in acute intermittent malaria is a manifestation of blood-breakdown or renal lesion and is a result of the congestive stage of the attack. To give quinine during the hæmaturia is equivalent to "shutting the door after the horse is stolen," and in addition gives the kidneys the irritating work of elimination. It would seem more rational to give it to prevent the next paroxysm.

In hæmoglobinuria occurring with the paroxysm there is probably less danger in using quinine than when true hæmaturia is present, since the kidneys are not as hindered and clogged by blood-clots: but even here it

must be evident that quinine can only stop future attacks, not the one already in existence. Should the attack of hæmoglobinuria be prolonged, indicating that the malarial poison is destroying the corpuscles independent of the chills, then quinine may be needed. If it is given, I believe that cholagogues, followed by a brisk purge, should be used to aid in the elimination of coloring-matter through the liver and bowel, and to relieve the kidneys of all labor which it is possible to remove. If in any case the intermittent paroxysms are so frequent as to make the quinine necessary, in view of the fact that other measures have failed, the same attention to the bowels should be given; the kidneys should be flushed out by diuretics such as the vegetable salts of potassium, and the quinine be given because the danger of the continued attacks is greater than that of renal involvement from the drug.

The third class of cases, namely, those which are included under the severe forms of bloody urine associated with jaundice and general hemorrhages from the stomach, the bowels, and the nose, are more difficult to treat than those just discussed. They present all the difficulties which non-hemorrhagic remittents produce, and the peculiar inability on the part of the absorbents, coupled with the bilious vomiting, makes all medication difficult, let alone the complication of bloody urine.

Much that has been said in regard to the condition of the kidneys and the contraindications to quinine in the milder forms of malaria, already spoken of, holds true with the severe form of hæmaturic fevers, yet here the very severity of the infection calls for quinine, although the contraindications are stronger than ever. This may be cleared up, however, by a recollection of three facts, namely, (1) that this malignant form comes on suddenly with the access of a malarial attack in a patient already broken down; (2) as an attack of hæmaturic jaundice without any evidence of another dose of malarial poison; (3) there are a number of remedies which are capable of doing much good before quinine is resorted to. The quinine will be needed in the cases suffering from active malarial paroxysms imposed on the subacute or chronic forms, but will not be needed in the second class of chronic cases, which should be treated by other measures directed to the relief of the dyscrasia and bloody urine.

It seems evident, therefore, that quinine, like the tints of the artist, must be "mixed with brains" if the best results are to be obtained, and that its routine use with blissful ignorance of its dangers ought not to be advocated; while, on the other hand, no one should for a moment cast discredit upon a truly specific remedy.

HYPO-SUBSTITUTE FOR OPIATES.

Dr. Obe F. Watlington of Memphis, Tenn. writes in the "Medical Brief," "I have in my possession a hypodermic alkaloidal solution, which is a specific in drug addictions (opium habituation, alcoholism, etc.). On receipt of a stamped envelope, or a two cent stamp, I will take pleasure in furnishing any Physician the formula, by the use of which a number of the fraternity have been enabled to cure themselves of Opiumism, Alcoholism and Insomnia. I used morphia hypodermatically for ten years. Obtained a perfect cure by this prescription."

THE SURGICAL TREATMENT OF PERICARDITIS.

Dr. Brentano has made a study of the cases of pericarditis in the surgical department of the City Hospital at Uraban in Berlin, under the directorship of Dr. Korte. He believes (*Deutsche med. Wochenschrift*, No. 82, 1898) that operative interference is indicated only in exudative pericarditis, and here only when the life of the patient is threatened or a purulent inflammation is suspected. He classifiies the methods of operation as follows: (1) Puncture; (2) incision through an intercostal space; (3) incision preceded by resection of a rib. There is no point at which puncture can be made with positive safety to the heart. As regards the position of the heart in pericarditis with effusion, experience in the Urban City Hospital has shown that in a pericardial sac filled with fluid the heart assumes a position against the anterior chest wall unless held in some other position by adhesions. The coronary arteries are therefore in danger of being injured during puncture, but much more frequently the pleura is threatened; in fact, in the majority of cases, pericardial paracentesis is made through the healthy pleura. This, under certain conditions, may lead to pleural effusion. Moreover, a pericardial exudate can rarely be entirely removed through a single puncture. Dr. Brentano has, therefore, totally discarded this procedure, as well as the operation by simple incision, because in the latter the internal mammary artery and the pleura are apt to be injured, it is difficult to obtain a clear view of the deeper structures, and adhesions cannot be adequately surveyed. On the other hand, the opening of the pericardial sac after resection of a rib is such a simple operation that it may often be attempted without narcosis, and carried to completion under local anæsthesia alone. The fifth left costal cartilage is the proper one to be resected, and after being stripped of its intercostal muscles, should be separated close to the sternum and at its junction with the rib. The mammary vessels crossing the body of the triangularis sterni muscle are to be doubly ligated and divided. The fibres of the muscle are then separated by blunt dissection, the over-lapping pleura is retracted, and an incision made in the whitish, glistening pericardial membrane. The fluid escapes in spurts, because the heart shows a tendency to close the opening. In purulent exudation, irrigation with sterilized water is recommended. The incised edges of the pericardium should be stuured to the skin incision, and the cavity drained by strips of iodoform gauze. In purulent cases the sac is irrigated daily with sterilized water. According to Dr. Brentano, in cases operated upon by this radical method, intrapericardial adhesions are less apt to occur. In the five cases thus operated upon, only one recovered, but the others were markedly relieved by the operation, and death resulted from the causative disease, and not from pericarditis. Pericardiotomy with resection of the fifth rib in two cases of purulent pericarditis, due to osteomyelitis, did not prevent a lethal termination.

EPITOME OF CURRENT LITERATURE.

MEDICINE.

The Etiology and Prophylaxis of Tuberculosis.—Andvord (*Norsk. Mag. for Lägevid.*, 1898, No. 4) bases his paper partly on the extraordinary constancy of the death rate from tuberculosis at all ages in any particular locality, and partly on the after-history of 814 children who had been treated in hospital for "scrophulo-tuberculosis." It was found that 60 per cent. of these were in excellent health, while a third had either succumbed to tuberculosis or were suffering from it at the time the enquiry was made. This shows that the percentage of persons with tuberculous phthisis rises with increasing age. The writer, therefore, comes to the conclusion that infection with the tubercle bacilli begins, as a rule, in childhood, and that in crowded areas the whole population is more or less infected, and inherits the predisposition to infection. The tuberculosis death-rate in any locality depends on a local constant, which Andvord considers to be the inherited or acquired power of resistance of its inhabitants to the infection. The practical conclusion is, that, in the battle against tuberculosis, the chief point is to protect the children from infection, and therefore to attack all enlarged tuberculous glands.

Meningeal Hæmorrhage in the Course of Purpura.—Havas (*Deutsche Med. Wochenschrift*, Sept. 8, 1898) reports a case of this complication in a girl aged 3 years. There was a history of hæmophila in the father's family. The child was convalescent from measles when purpura hæmorrhagica set in, with bleeding from the nose, mouth, and intestine. After this had continued for a fortnight clonic spasms on the left side of the mouth, and later in the left arm, were observed. These were followed by left glosso-facial monoplegia, and paresis of the left arm, with recurrent epileptiform convulsions in the paralyzed parts. There were headache and vomiting, a contracted condition of the left leg, and finally coma and high ante-mortem temperature. A diagnosis of either a hæmatoma of the dura mater or a considerable hæmorrhage over the pia mater was made. The site of the hæmorrhage was, on the first day, over the lowest part of the right anterior central convolution (paralysis of facial and of hypoglossal), but extended on the second over the middle third of the right central convolution. The contraction of the left leg was probably due to irritation of the neighbouring leg centre (paracentral lobule).

Malt Soup as a Food for Infants with Gastro-enteric Disorders.—Keller (*Deutsche Med. Wochenschrift*, Sept. 29, 1898), in the belief that none of the newer preparations of "humanised" cows' milk, including Gaertner's "fat-milk," are able to replace mothers' milk successfully, or have had any effect in reducing infant mortality, has carefully investigated the physiology and pathology of infant metabolism. His results show that, in infants with gastro-enteric disorders, the food must

be strongly alkaline; much casein and fat must be avoided, and to some extent replaced by easily oxidisable carbohydrates. He strongly recommends the following receipt both on practical and theoretical grounds. 50 grammes of wheaten flour are stirred up thoroughly in one-third of a litre of cows' milk and strained. In another vessel 100 grammes of extract of malt are dissolved in two-thirds of a litre of water at 50° C., and 10 c.c. of an 11 per cent. solution of bicarbonate of potassium added. The two are mixed together and boiled. It is then ready for use. This preparation has been extensively used both for out and in-patient infants with gastro-enteric disorders at the Breslau Hospital, and all the physicians there are convinced of its superiority over all other artificial combinations. The babies gain weight during its administration, and no bad cases of rickets have occurred.

The Valuelessness of Drugs in the Treatment of Gout.—Dr. Arthur P. Luff (*Lancet*, 1898, No. 3902, p. 1606) states that the treatment of this disease by alkalies is mainly based on the assumption that uric acid is present as such in the blood and tissues, and is rendered soluble by the administration of alkalies, that uratic deposits of sodium biurate are dissolved by alkalies, and that the system of a gouty person is pervaded by a general acidity which is neutralised and removed by alkalies. With regard to the first assumption, it is now well known that in gouty subjects uric acid is never present as such in the blood and tissues, but is always combined with sodium as the quadriurate or biurate. The only way in which alkalies could beneficially affect the quadriurate would be to delay its conversion into the biurate. Experiments with an artificial blood-serum to which potassium carbonate, potassium citrate, lithium carbonate, lithium citrate, sodium bi-carbonate, sodium phosphate, piperazine and lysidin were added in solution showed that this conversion is not delayed. The following do not in the slightest degree increase the solvent power of the blood for gouty deposits: Potassium carbonate, potassium citrate, lithium carbonate, lithium citrate, sodium phosphate, piperazine and lysidin. Sodium bicarbonate slightly decreases the solvent power of the blood for gouty deposits. The assumption that in connection with gout there is a general acidity of the system which causes a diminished alkalinity in the blood is opposed to the results of recent investigations upon the subject. Klemperer showed that the alkalinity in the blood in gout is very little, if at all, diminished, and that corresponding variations in the alkalinity of the blood may frequently be met with in healthy individuals. Moreover, a diminution of the alkalinity of blood serum containing uric acid in solution does not facilitate the deposition of sodium biurate from it, nor does a diminution in the alkalinity of blood-serum diminish its solvent power. Experiments with sodium salicylate show that it has no direct action either in delaying the decomposition of sodium quadriurate, or in effecting a solvent action on deposits of sodium biurate. The supposed solvent effect of sodium salicylate for gouty deposits does not, therefore, exist. The correct explanation of the increased elimination of uric acid in the urine during the administration of sodium salicylate is that salicylic acid unites readily with glycocine, and

so conveys an increased amount of that body to the kidneys, where, by its combination with urea, an increased amount of uric acid is necessarily formed. This increased formation of uric acid is directly detrimental to gouty subjects, and on that account the salicylates are contraindicated in that disease. The general conclusions are that the ordinary alkalies, lithium salts, piperazine, and lysidin are useless, and sodium salicylate is also apparently contraindicated in gout.—*Amer. Jour. of Med. Sciences.*

General Paralysis and the Tetanus Bacillus.—Montesano and Montessori (*Centralbl. f. Bakter. u. Parasitenkunde*, Bd. xxii., No. 22 u. 23) made pure cultures of the tetanus bacillus and the streptococcus pyogenes from the cerebro-spinal fluid taken from a case of general paralysis of the insane by lumbar puncture. The inoculation of animals with these bacilli produced tetanus, though the patient during life had shown no symptom of this disease. The writers believe that general paralysis is an infective disease, and, in spite of a negative search for the bacteria in ten other cases, that the tetanus bacilli had a causal relation to the paralysis, or at least to the epileptic fits which occurred in its course. Both this patient himself and his father had had syphilis.

Chronic Tonsillar Abscesses and Their Results.—(*Berliner Verein für innere Medicin*, Oct. 24, 1898.) Dr. Treitel observed that it is now well known that acute infective processes may result from tonsillar affections, and that there is a relation between sore throat and articular rheumatism, pleurisy, perityphlitis and pyæmia. A series of cases of septicæmia starting from the tonsils has been published, in many of which the primary focus was so slight as to be unnoticeable. It is probable that even the streptococci, which are normally present in the lacunæ, may, under certain unknown conditions, become virulent and give rise to septic infection. Especially grave conditions may arise if the abscesses are situated deeply in the tonsils. Such a case Dr. Treitel observed himself. A man, aged 63, became ill with slight huskiness and fever, and difficulty in swallowing. A laryngoscopic examination revealed an œdematous swelling of the epiglottis and aryepiglottic folds. The dyspnœa increased and tracheotomy was performed, when a foul-smelling abscess over the tracheal cartilages was opened. The man died. Post-mortem, there was found recent mediastinal suppuration and multiple tonsillar abscesses, which, from their thickened walls, were evidently old.

Such chronic abscesses are not infrequently the starting point of a widespreading infection, though it is the exception to be able to diagnose them during life. It is, therefore, good practice to lay open tonsillar lacunæ in patients who are subject to frequent sore throats, and to insist on cleanliness of the mouth and nose.

Dr. Benda pointed out that there was a distinction between infective diseases which may invade the system through the tonsils, and true pyæmias arising from tonsillar abscesses.

The Dosage of Belladonna and Nux Vomica.—Dr. Leech (*Brit. Med. Jour.*, Nov. 12, p. 1495). The investigations of pharmacists subsequent to the publication of the 1885 *Pharmacopœia*, show that accurate dosage with the official preparations of belladonna and nux vomica is impossible, since, however carefully such preparations are made, their strength may widely vary owing to the difference in the amount of alkaloid contained in the crude drugs themselves; hence the necessity for the changes made in the *Pharmacopœia* of 1898. The alkaloid contained in the maximum doses of the preparations of belladonna in the 1885 *B.P.* varies from $\frac{1}{300}$ to $\frac{1}{75}$ of a grain. In standardised preparation of the 1898 *B.P.* the width of limit has been greatly lessened. The largest dose of the new tincture (15 m.) corresponds to $\frac{1}{150}$ grain of alkaloid; the largest dose of the alcoholic extract to $\frac{1}{100}$ grain, these amounts being equivalent to about two-thirds and 1 drop of liquor atropinæ sulphatis respectively. The tincture and extract of nus vomica have been rendered likewise much less variable in strength than formerly by standardising according to the amount of strychnine instead of according to the amount of total alkaloid contained.

Weil's Disease.—L. Klein and F. Schutz (*Wiemer Med. Wochenschrift*, No. 6-8, 1898) have observed six cases of Weil's disease, in all of which the cardinal symptoms—viz., fever, nephritis and jaundice—were present. The disease is ushered in by fever, which begins suddenly, quickly attains a maximum, and falls to normal in five to six days by lysis. At the same time there are violent muscular pains, and pains in the neck, with sore throat. The urine is always albuminous, and often contains casts. The pulse rate is generally quickened, but may be subnormal. Jaundice appears simultaneously with the fall of temperature; and, therefore, five to six days after the onset. About this time the liver is almost always enlarged. The spleen is generally enlarged from the beginning. Grave cerebral symptoms and vomiting often appear with the jaundice, so that they have some relation to those accompanying icterus gravis. There is no rule as to the state of the bowels. Cutaneous petechlæ are common.

The disease always begins very acutely, but improvement is noticeable in a few days, and convalescence, though eventually tedious, is established in the second week.

All the writer's patients had been bathing in dirty water, which had been sometimes swallowed. The outbreak of the disease, which occurred in barracks, ceased immediately on forbidding bathing. One patient had, also, been eating bad meat, which is supposed to be a frequent cause of the disease. The poison gains admission from the digestive tract, and possibly, in some cases, through the throat.

Chronic Jaundice With Enlargement of the Spleen.—J. Levy (*Thése de Paris*. 1898) calls attention to a variety of chronic jaundice whose clinical characters are, (1) chronic icterus of uncertain duration, appearing paroxysmally, with moderate enlargement of the liver during the attacks, (2) considerable hypertrophy (permanent) of the spleen, which

during the paroxysm is congested, and which becomes more and more sclerosed, (3) digestive disturbances, (4) mostly intense anæmia, but (5) no ascites or collateral venous circulation. The cause seems to be an ascending infection of gastro-intestinal origin, which reaches the larger bile-ducts. Unless this jaundice is distinguished from that due to gall-stones, it may lead to unnecessary surgical operations. The prognosis is favorable as the disease may last for twenty years or more. This variety may be classified among the simple chronic infective jaundices. Hayem has proposed the name, "Ictère infectieux chronique splenomégalique à poussées paroxystiques."

Pneumonia with Empyema, Cerebral Abcess and Meningitis.—Aufrecht (*Deutzches Archiv. für Klin. Med.*, Bd. lix. Hft. 5 u. 6) reports a case where a pleural effusion was diagnosed during a typical attack of pneumonia, with rusty sputum and pain in the left lumbar region. A week after the onset of the pneumonia the patient had severe cerebral symptoms, which lasted for twenty-four hours only. Eight days later an operation for empyema was performed, and this was followed by a slow recovery. Eight days after the discharge from hospital he was seized with fever, vomiting, and retraction of the head, which were followed by coma and rapid death. Post-mortem recent purulent meningitis was found, which had started from an abscess in the left corpus striatum. The writer thinks there can be no doubt that this abscess was metastatic, had begun during the pneumonia, and, after lying latent for two months had ruptured into the lateral ventricle.

Locomotor Ataxy and Syphilis.—Scheiber (*Deutsche Med. Wochenschrift*, Sept. 22, 1898) throws doubt on the inference usually drawn from statistics that syphilis is the principal, if not the only cause of locomotor ataxy. Cold, over-fatigue, worry, venereal excesses or injury, are now generally rejected as causes. As regards fatigue, however, Edinger and Helbing have recently shown that rats, if made to work hard and long, develop exactly the same lesions in the posterior columns of the spinal cord, and in the nerve roots, as occur in tabes. Statistics, in this case, as a rule depend on the patient's word, and are, therefore, untrustworthy. The following facts ought to outweigh theories: (1) In many countries (Japan, Bosnia and Herzegovina, Central Asia, Abyssinia, etc.) syphilis is exceedingly common, while tabes is very rare, or altogether unknown. (2) Tabes is rare in prostitutes, who have mostly had syphilis. (3) Several cases are known where tabes developed in *virgines intactæ*, and where, from the circumstances, syphilis could be excluded with certainty.

Diphtheritic Noma.—Freymuth and Petruschky (*Deutsche Med. Wochenschrift*, Sept. 22, 1898) publish a case of cancrum oris occurring in a boy aged 8 years, who was in the sixth week of a severe attack of typhoid fever, in which Widal's reaction was present and typhoid bacilli were found in the urine. In the necrosed mucosa Petruschky found, besides what he held to be harmless saprophytic vibrois, cocci, and spirilla, also

typical diphtheria bacilli, though these were very slightly pathogenic for guinea pigs. The child, after being at death's door, recovered with eight injections of diphtheria antitoxin, in all, 9,500 units. The writers draw attention to the importance of diagnosing diphtheritic noma early, with a view to its treatment by antidiphtheria serum. Though the causal relation of the bacilli to the disease was not actually proved, they believe it to be a not uncommon occurrence, since, earlier in the year, they published (*Medical and Surgical "Review of Reviews,"* vol. 1, p. 153) a case of noma of the vulva, in which diphtheria bacilli were found, and which recovered under antitoxin.

The Painless Treatment of Cracks in the Nipples.—At the meeting of the Obstetrical Society, held on Nov. 10, a paper was read by MM. Maygrier and R. Blondel, upon the Treatment of Forty Cases of Cracked Nipples at the Charité Hospital. They had dressed the cracks with orthoform, which brought about complete anæsthesia during suckling and kept the cracks aseptic. The application of the powder causes only slight smarting. The infant was put to the breast a quarter of an hour afterwards, and sucked eagerly, as orthoform has neither taste nor smell. The anæsthesia persists for some time. MM. Maygrier and Blondel made trial of orthoform powder alone, of orthoform followed by a moist dressing of boric acid, and finally with a strong alcoholic solution of orthoform dropped into the cracks. They considered this last method the best, for it caused no more initial smarting, but it quite did away with infection of the breast, probably because the solution was able to penetrate into the recesses of the fissures.—*Lancet*, Nov. 19, p. 1369.

Blue Nasal Secretion.—At the annual congress of the French Society of Otology and Laryngology, M. Molinié, of Marseilles, related the case of a young woman, aged 25, in whom, after a severe attack of grippe, there occurred a discharge of blue secretion from the nose. In the beginning the discharge was generally viccous and colorless. Several times during the day, however, the mucous was streaked by lines of blue as deep as methylene blue. Examination of the nasal fosse demonstrated that the source of the secretion was the right middle meatus.

A short, squat bacillus with rounded extremities, colored by methylene violet and gentian violet, and retaining its color under the Gram reagent, was found. Although cultures did not yield the characteristic blue color, it is very probable that this case of blue chromorhinorrhea was due to the development of a pyocyanic colony in the frontal sinus of the right side.—*Revue Hebdomadaire de Laryngologie, etc.—St. Louis Med. Jour., Nov.*

The Treatment of Burns with Chlorate of Potash.— Larger (*Gazette des Hôpitaux*, Oct. 27, p. 1131) employs cold solution of chlorate in local or even general baths immediately after burns. In case of urgency all that is necessary is to throw the crystals into cold water and agitate a little; in consequence of its feeble solubility the salt dissolves only to

the required degree. The remedy is efficacious in even deep burns, but the action is particularly evident in the erythema of superficial burns. Relief is immediate.

Such is the treatment at the beginning when pain is dominant. Later, the method varies according to the depth of the burn. If deep, it is treated with dressings, like an ordinary wound; if superficial, compresses of chlorate of potash are continued until the end, but they are covered after one or two days with mackintosh.

Chlorate of potash has the advantages of being a feeble antiseptic, and not only non-irritant, but soothing. Administered in large doses it is toxic, but used in this manner it is absorbed in only small quantities. During twenty-eight years, M. Larger has employed it at all ages without accident.

Boulimia.—On August 27 an inquest was held at Plumstead upon the body of William Ward, aged 84 years, an army pensioner, who died from asphyxia. At the post-mortem examination three pieces of meat, measuring in all 12 in. in length, were found in the deceased's "throat." Evidence was given that he was always a gluttonous feeder and in the habit of bolting his food. His daughter-in-law said that she used to mince his food, but that even then he would bolt such large spoonfuls that he had to gasp for breath. A verdict was returned of "Accidental death." Instances of ravenous appetite are not uncommon, constituting the condition known as boulimia or bulimy, moreover, this craving for food substances is sometimes associated with another condition known as polyphagism, when the sufferer eats pins, string, broken bottles, and other indigestible articles. The *Lancet*, for May 5, 1894, commented upon the death of a man in the London Hospital whose stomach was found after death to be full of a heterogeneous mass of these things. Certain tribes in South America are known as earth-eaters, from the habit they have of filling their stomachs with clay, and the custom of gorging is not uncommon among those who live a precarious life. In 1799 there was a French prisoner in England, by name Charles Domery, one of nine brothers, who, with their father, were all remarkable for voracious appetite. One day he was allowed as much to eat as he liked, and between 4 a.m. and 6 p.m. consumed 4 lb. of raw cow's udder, 10 lb. of raw beef, 2 lb. of candles, and five bottles of porter. The narrator remarks: "It is also to be observed that the day was hot, and not having his usual exercise in the yard, it may be presumed he would otherwise have had a better appetite." We fancy the custom still exists in some parts of the country of having hasty pudding eating matches, and at a certain college in Oxford, the following rite obtains or used to do twenty years ago: On Mid-Lent Sunday, the first lesson in the evening is Genesis xliii., which gives an account of Benjamin's mess, which was five times as great as any of the other's. Furmenty was always served in Hall on that evening, and the junior man at each table was considered as Benjamin, and served with an enormous helping. If he ate it all, he could "sconce"—*i.e.*, fine the whole table in sherry—if he could not, he was himself fined. When this custom originated no one knows, but it is probably like so many other customs, a remnant of paganism with a veneer of Christianity over it.—*Lancet.*

ON THE VALIDITY OF THE NEURONE DOCTRINE.

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One might look far to find a concrete example better suited to illustrate the universality of change than the flux and reflux of opinion which is seen among scientists when a large number of them are engaged in different parts of the world in the investigation of similar problems. Doctrines thought to be firmly established are from time to time violently assailed by skeptical antagonists, with the result sometimes, that they totter and fall and have to be replaced by others entirely new. At other times an earlier construction may be retained, though various beams and pillars proven by time to be unessential or even detrimental to its welfare have to be removed and replaced by more sound material. But although, in rare instances, we meet with a doctrinal edifice which has been so well planned by its architect and provided with foundations so solid, a framework so suitably distributed and a superstructure so accurately measured that even the most violent storms of hostile criticism fail to shake it, it is doubtful if a completely stable doctrine can be said to exist at all. The most universally accepted laws of nature are in the end found to be but relative. Almost every one of those now recognized when analyzed is found to be the resultant of a long series of successively modified generalizations. Whenever, therefore, a new hypothesis has been put forward or a new doctrine promulgated, especially in connection with the finer form relations in developing living bodies, it is interesting not only to watch the reception which it meets, but also to follow its subsequent history, the modifications which it undergoes, its destruction, if it be faulty, or its survival, if it be fit. And in these days in which activity in scientific work is so widespread, when authority means nothing and every man is a Pyrrhonist, and that, too often without the accompanying virtues of *ataraxia* and *matriopathia* attributed to the founder of the sect, we have, as a rule, not long to wait.

It is now only seven years (if we arbitrarily choose the date of the publication of Waldeyer's celebrated article as that of its inauguration) since what is known as the Neurone Doctrine of the nervous system was formulated. Let us inquire briefly how it has fared.

Before doing so, however, it may be permissible to recall exactly the principle or principles which it involved; for with the passage of time both friends and enemies exhibit a tendency consciously or unconsciously either to unjustly limit a doctrine or to unlawfully expand it, so that the presentation of it in one man's mind is very different from that entertained by a second and the fundamental conception of each far from being identical with that of its originator.

To understand thoroughly what is comprehended in the neurone conception one cannot do better perhaps than to turn directly to the article of Waldeyer, above referred to. Waldeyer by no means deserves all the

credit for the foundation of the doctrine, for the work upon which it is based had been done, much of it many years before, and the principles of the doctrine had already been laid down by several distinguished anatomists. But for our present purpose his monograph is of especial importance on account of the fact that, in it he brings together in a masterly way the great mass of data (anatomical, pathological, ontogenetic) bearing upon the topic, subjects these to a searching criticism, sifts out the essentials from the non-essentials, sharply defines the conception of the anatomical and physiological unit in the nervous system and gives it a name. I have recently re-read this article in order to free myself from any mental accretions which may have inadvertently adhered to my recollection of it since a former perusal, and feel, therefore, in a position to state without bias what was meant by the neurone conception by Waldeyer at the time at which he wrote.

In the first sentence of the last paragraph of his article one finds the gist of the doctrine. It reads somewhat as follows: "If we review the main advance, made certain by the anatomical investigations discussed, it lies, in my opinion, in the sharper limitation, now possible, of the anatomical as well as the functional elements of the nervous system (for such we have to consider the nerve-units—neurones), and also the discovery of the collaterals with their end-arborizations by Golgi and S. Ramon y Cajal."

Turning back a little farther to the beginning of his summary of the whole matter we find: "The axis-cylinders of all nerve-fibres (motor, secretory and sensory, conducting centrifugally or centripetally) have been proven to proceed *directly* from cells. A connection with a fibre-network, or an origin out of such a network does not occur." Again, "all the nerve-fibres end free with end-aborizations (Kölliker) without the formation of net-works or anastomoses." Combining the latter two statements he continues: "The nervous system consists of numerous nerve-units (neurones) united with one another neither anatomically nor genetically. Every nerve-unit is composed of three pieces: (1) the nerve-cell, (2) the nerve fibre, and (3) the terminal arborescence of the fibre." After a discussion of the probable modes of conduction by means of the neurones, he adds, it would seem almost with prophetic foresight, the following statement: "If we assume with Golgi and B. Haller the existence of nerve-networks the conception is somewhat modified, but we can still retain the nerve-units. The limits between two nerve-units would then always lie in a nerve network and not anatomically at least, be exactly definable with our present methods." And in another place with characteristic reserve the possibility of the existence of a nerve network is not denied. To quote his own words: "Wie die Dinge heute stehen, darf man jedenfalls behaupten, dass der sichere Nachweis anastomotischer Nervennetze noch nicht erbracht ist, und dass die miesten sich für ein Neuropilema aussprechen."

Having thus cleared the way, as it were, by refreshing our memories as to the exact scope of the doctrine, at least as it was conceived by one of its ablest exponents, we are prepared to proceed with the inquiry. In how far have researches since the time of the formulation of the neurone-

conception by Waldeyer in 1891 agreed with its main tenets? Is the neurone-conception still valid in its entirety or has it to undergo serious modification or, finally, has it been proven to be fundamentally false?

A generally entertained conception may be shown to be invalid in one or both of two ways. In the first place, the data upon which the generalization is based may by subsequent investigation be proved to be unreliable, or actually false; in the second place, researches undertaken after a generalization has been made may reveal entirely new and previously unsuspected facts which cannot be brought into accord with it. In either event the doctrine has to be modified, or entirely given up.

To proceed in an orderly fashion, therefore, it will be appropriate first to ask (1) upon what data was the neurone-doctrine founded? and (2) has the reliability of these data been refuted? If the latter question is answered in the affirmative, we need go no further, but if it can be answered in the negative, we have still to consider (3) the possibility of an invalidity depending upon discordance with entirely new discoveries.

It is an experience, no more uncommon for the writer of medical history than for other historiographers, to find in the search for the origin of a doctrine, that long before the time generally believed to be that of its foundation, the ideas comprehended in it have not only been floating in the consciousness of a number of individuals, but that expression has actually been given to them in articles in the bibliography. This is particularly true, as we have already pointed out, of the history of the neurone-conception. In its embryonic form it can be discerned extending far into past decades, and in its growth it has drawn nourishment from the most varied sources. It is not the child of a single parent: on the contrary, its constitution represents a curious germinal admixture and several of the different elements composing it can with justice claim to be of equal value. It is not my intention here to review all the stages in the development of the conception; besides occupying too much time and space the task would be superfluous since in every civilized country one or more neurologists have dealt with the topic in detail. It will be sufficient to mention the results of a few of the more important researches, which by themselves, if true, would suffice for the building up of the doctrine.

In the first place the studies dating from the thirties which established the cellular structure of vegetable and animal bodies might have been sufficient in themselves to permit *a priori* of the construction of an hypothesis that cellular units existed in the nervous system. The difficulty met with in the application of such an hypothesis was twofold. It lay (1) in the relations of the nerve-fibre to the nerve-cell, and (2) in the enormous complexity of the branchings of the protoplasmic processes of the nerve-cell. And although Virchow and others evidently believed in the extension of the cell-doctrine to the nervous system, but little was said for a long time about "units" in the nerve-substance. Even the demonstrations of Remak, Helmholtz, von Kolliker and Deiters, important as they were in showing the origin from cells of a number of axis-cylinders of nerve fibres, were insufficient as a basis for the application of cell-

doctrine to the nervous system. The delay in recognizing the true relations was doubtless furthered by the hypothesis of Gerlach, according to which a large proportion of the nerve-fibres did not arise from cells at all, but were supposed to issue in some obscure way from the extremely fine meshed and delicate nerve network, which his gold method revealed and which he believed to be formed by the anastomesis of great numbers of the finer subdivisions of the protoplasmic processes of the ganglion cells.

It was the embryologist Wilhelm His who first formulated clearly and distinctly the doctrine of the cellular nature of the nervous tissues. Studying the development of the nerve cells in man and animals he concluded early in the eighties that every nerve-fibre arises from a single cell, that this cell is not only the genetic but also the nutritive and functional centre of the fibre, and that all other connections of the fibre are either indirect or arise secondarily. In his study of the neuroblasts he proved that the axone of the nerve-cell was the first process to develop, the dendrites arising at a later period. He was further able to demonstrate that these developing units in the early history of the embryo undergo marked changes in position, some of them wandering long distances from their birthplaces before arriving at a position corresponding to their location in the adult tissues. The individuality of the units at this stage (with the possible exception of persisting intercellular protoplasmic bridges), is the easiest of observations to confirm, and every student who has at his disposal sections of embryo chicks or of early human embryos can convince himself in a few moments of the accuracy of the descriptions of His.

A little later a man of unusually keen vision, the psychiatrist and pathologist Forel of Zurich, one of the ablest of Bernhard von Gudden's pupils, argued in favor of the doctrine of the individuality of the nerve-elements. He was instigated mainly by the epoch-marking investigations of Golgi, which were only beginning to attract attention, but based his plea largely upon the observations which had been made concerning degenerative processes inside the nervous system. In his admirable essay published in the *Archiv für Psychiatrie u. Nervenkrankheiten* in 1887 he reviewed the discoveries of Golgi, and especially emphasized the latter's discovery that the protoplasmic processes of the nerve-cells do not anastomose with one another, and his observations of two types of nerve-cells (a) those with long axones, and (b) those with short axones. Though subjecting some of Golgi's statements to a severe criticism arraigning especially the hypothesis of that investigator concerning the functions of the cells of the two types described, he did not fail to see the importance of the "caprice" of the Golgi method, *i. e.*, the staining of an element only here and there (cell-body with dendrites and axone). It is, however, the utilization by Forel of the studies of secondary degenerations to support the doctrine of the individuality of the nerve-elements that makes his communication all important.

Forel recalled to mind the fact that not only does the distal end of a divided motor nerve-fibre undergo rapid disintegration after section of the fibre (Wallerian degeneration), but also, in contradiction to the Wal-

lerian doctrine, the proximal end undergoes cellulipetal degeneration though much more slowly (von Gudden), when the separation takes place at the point of exit of the motor nerve from the central system. He pointed out further that when degeneration attacks a tract of nerve-fibres, it extends only as far as the termination of the tract. Atrophy of nerve-cells and of nerve-fibres beyond undoubtedly often occurs in the form of shrinking of the cells and narrowing of the calibre of the fibres, but this is a fundamentally different process from that degeneration with absorption which characterizes the process in the elements directly involved. He chose for illustratlon the instructive experiments of von Gudden and von Monakow bearing upon the nature of the paths leading from the retina to the cerebral cortex. If one eye say of a rabbit, be extirpated there is almost total degeneration of the corresponding optic nerve, marked degeneration of the opposite optic tract, and a considerable diminution in size of the opposite lateral geniculate body, due not to a degeneration of the cells which it contains, but to a disappearance of the gelatinous substance between the cells (terminal ramifications of the fibres which have entered from the tractus opticus). On the other hand, if a certain definite region of the cerebral cortex be extirpated (part of the Lobus occipitalis) the resulting changes in the lateral geniculate body are very different. The volume of this necleus is diminished even more than in the former experiment, but microscopic examination reveals the interesting fact that in this instance it is not the gelatinous substance between the cells which has disappeared, but the cells themselves which have vanished. Pathology, therefore, establishes the existence of units; the limits of a given degeneration correspond to the extent of the units affected. Between the retina and the cerebral cortex at least two units are concerned in conduction, one extending between the retina and the optic centres at the base of the brain, and a second extending from the latter centres to the cortex of the occipital lobe.

Even more brilliant and perhaps more convincing to the medical world as a whole, were the striking results obtained by S. Ramon y Cajal, von Kolliker, van Gehuchten, Retzius and von Lenhossék with the method of Golgi, and with modifications of that method. The pictures of nerve-cells and their processes obtained by means of silver impregnations, especially in embryonic tissues spoke strongly in favor of the doctrine of the individuality of the nerve-units. Not only were the findings of Golgi contradicting Gerlach's hypothesis concerning the dendrites confirmed, but the suggestion of Golgi himself that a diffuse nerve-network formed of the collaterals from the axones of cells of Type I and of the branches of the axones of cells of Type II was proven not to be in accord with the facts. From the young neuroblast of the early embryo up to well-developed nerve-cells with their complexly branched processes, every stage in the histogenesis could be accurately followed and so repeatedly did apparent anastomoses of processes turn out on close examination not to be real anastomoses that many of the investigators with this method hesitate to believe that *any* of the appearances thus reported were in reality organic connexions, some even going so far as to deny anastomosis altogether. But while the researches of Dogiel and others

especially with the methylene-blue method, and the studies of Tartuferi with the silver-method established beyond question the fact that anastomoses between protoplasmic processes sometimes at least occur, the observation in normal tissues that with both the methylene-blue method of Ehrlich and the silver method of Golgi and Ramon, single units could often be isolated in their whole extent, other cells and processes immediately adjacent remaining unstained, went far toward contributing, from the purely histological side, a confirmation of the doctrines based upon developmental and pathological studies.

The neurone-doctrine, therefore, was based upon a foundation which was quadruple (1) the *a priori* probability that the nervous system like all other parts of the body is a cellular system; (2) the proof that in the embryo the nerve-cells exist as independent units, many of which are capable of wandering for considerable distances from the site of their origin; (3) the proof that the nutrition of the nerve-cells is most easily explicable from the standpoint of the doctrine which looks upon the nervous system as made up of units, which are not only anatomical, but also physiological, since in pathological degenerative processes affecting a given unit or set of units, degeneration of a given type extends only within the limits of that unit or set of units, any degeneration of other units being of an entirely different nature, and when resembling the former occurring much more slowly; and (4) the histological demonstration of the fact, that, for reasons as yet too subtle for analysis, sometimes one unit, sometimes another may be picked out by a particular method of staining or impregnation and brought exquisitely into view, others near by remaining only partially stained or entirely unaffected. The doctrine, too, agreed well with all the known facts discovered by Edinger, Herrick and others in the great field of comparative neurology.

Have these data been proven to be unreliable? With regard to the cell doctrine it may be said to be still universally held although it is true that it does not explain all known facts and that here and there a distinguished biologist draws attention to its "inadequacy." The embryological researches of His concerning the neuroblasts have been manifoldly confirmed by his own and by other methods. Not until we come to the studies of degenerations inside the nervous system do we find any appearance of discrepancy. The doctrines of von Gudden and von Monakow on the whole however still hold. Lesion of a given set of neurones causes degeneration of the typical and generally recognized sort (that revealed by Weigert's method) only within the domains of that set. If large numbers of neurones belonging to a given system degenerate and are absorbed, there may, it is true, after the lapse of a very long time be total atrophy with absorption in neurones of another order (as in the case reported by Flechsig and Hoesel in which the thalamo-cortical neurones of the general sensory path had been injured by a lesion involving the central gyri, and after many years many of the neurones, the axones of which go to make up the internal arcuate fibres of the medulla oblongata and the fibres of the lemniscus medialis, had entirely disappeared). But as a rule the tertiary change is one of shrinking and diminution of the calibre of the medullated fibres rather than complete disintegration

and absorption (as the condition in which the brachium conjunctivum is ordinarily found after extensive disease of one cerebral hemisphere fully illustrates.

Since 1891 a vast deal of work upon degenerations has been done with two methods which are especially well adapted for yielding information especially in tissues obtained too soon after the lesion to be of valuefor study by the method of Weigert. The first of these methods, that of Marchi, thus far speaks strongly in its results for the validity of the neurone-doctrine. There is no evidence from its use that a degeneration following an injury extends beyond the limits of the neurone or neurones which the lesion involves. On the contrary, the method is mainly of value since it permits the following of a set of diseased fibres to their termination. By its aid, the exact course and distribution of Gowers' tract as far as its ending in the cerebellar worm have been followed. This is only a single, although an important example, of its efficacy.

Investigators who have employed the second method, that of Nissl, and its various modifications have been extraordinarily active. The procedure is an extremely delicate one, and changes hitherto entirely unsuspected have been detected by it in various pathological conditions. Through it, in one respect at least, the neurone conception has been supported; for the method has demonstrated that when any portion of an axone or its terminal ramifications is diseased, the whole neurone to which that axone belongs suffers, the changes which occur in the "stainable substance" or "tigroid" of the cell-body and dendrites of a neurone after lesion to its axone being now generally recognized and appreciated. In another respect, however, the application of the method of Nissl has brought into view a phenomenon which at first glance appears to be opposed to the neurone-conception. It has been found by Marinesco (though curiously enough he interpreted his observation incorrectly), by Warrington, and by van Gehuchten, that in certain instances the cutting through of a sensory nerve between its ganglion and the central nervous system (or in terms of the neurone conception, solution of continuity of the axones of sensory neurones of the first order) is followed by changes in the nucleus terminalis of the nerve quite like those which occur in the cells of the peripheral ganglion itself after section of the sensory nerve between the ganglion and the periphery of the body, or like those which follow in a motor nucleus upon section of the root fibres issuing from it. Highly interesting as the phenomenon is, and as yet insufficiently explained, it can hardly be said to, in any way, invalidate the neurone-conception. The fact that an injury to one individual in a society leads to the detriment of certain other individuals with whom the former individual was most intimately associated, cannot be considered as disproving the idea that the society is composed of individuals. And that in the case of the neurones under consideration the character of the injury in the peripheral and in the central neurone differ is obvious from the subsequent history of the two neurones in animals permitted to live for some time after the injury. In the one instance typical Wallerian degeneration with absorption quickly takes place, in the other there is, at most, slow secondary atrophy.

Histologically, there have been since 1891 repeated confirmations of the earlier single observations of coarse anastomoses of dendrites. In mammals, the finding except in the retina is rare, though in lower forms, according to the recent observations of Bethe, Nussbaum, Schreiber, and Holmgren, it appears to be more common. I have myself seen it in the nervous system of rabbits, and have observed, what others have seen also, namely, the partial fusion of the cell-bodies of two neurones. But these unusual conditions, even were they common, are surely of but little consequence when brought forward as arguments against the individuality and independence of the nerve units. If one thinks for a moment the unreasonableness of the objection becomes obvious, for who would consider seriously the argument of an anthropologist who contended that the human race did not consist of separate units and individuals, on the ground that the cases of double malformations like the Siamese twins, the Janus-headed monsters and the various instances of epignathi, thoracopagi and *foetus in foetu* are known to occur. Even if in the heart of Africa somewhere we should come to find that there existed a terrible and swift race such as Plato makes Aristophanes describe in the *Symposium*, we doubt very much if we should be willing to give up the general view that humanity is a mass of multiple units, though doubtless we should have to modify our conception as to the possibility of variety in the units, or admit a bond of union between units more intimate than that to which we are accustomed.

On the whole, however, it may be said with fairness that the control instituted by hundreds of histologists in various parts of the world has, practically in every instance in which the method of Golgi or the method of Ehrlich has been employed, gone to confirm the conception that the neurone is a unit in the sense of Waldeyer.

Passing now to the last inquiry, let us examine the original contributions dating since 1891 and see if in them we can find any facts which necessarily nullify the validity of the neurone-conception. In this connection only two researches present themselves which are likely to be brought forward by its antagonists. One of these is the investigation of Held concerning the kind of relation which exists between the terminal branches of an axone of one neurone, and the cell bodies and dendrites of other neurones with which they are connected; the other is the much-talked of research of Apàthy emanating from the Zoological Station at Naples.

Held's communication is one of very great importance, representing, as it does, the most careful application of modern cytological technique to the study of the nerve-cell and its processes. His findings concerning the tigroid and the ground substance of the protoplasm, brilliant as they are, do not concern us here. The observations of Held, however, which must here be taken into account are those in which he describes fusion of the terminals of the axone (including the end-ramifications of the collaterals) of one neurone with the protoplasm of the dendrites and cell-bodies of neurones of a high order. Held agrees with other investigators that in embryonic tissues and in early youth the neurones are entirely independent of one another (except for an occasional dendritic or other

anastomoses). In these stages, which, by the way, correspond to those of the majority of Golgi preparations, he finds, in areas especially well suited for the study (*e. g.*, the nucleus of the trapezoid body) that when the terminal of an axone comes into contact relation with the cell-body of another neurone, one can always make out where the protoplasm of the one neurone ends and where that of the second begins, inasmuch as the line of demarcation is more refractive than the adjacent protoplasm. Held finds, however, that this refractive limiting line is not demonstrable in the adult, and comes to the conclusion that during the process of growth the protoplasm of related neurones fuses. Indeed, in some instances, there is evidence that the terminals of one neurone plunge deep into the cell-body of another neurone and even come into close proximity to the nucleus of the latter. He describes the relation as one of "concrescence." Held's pictures are very convincing and one must certainly admit that his work proves the existence of much more intimate relations among the neurones than the studies made with Golgi's method had led us to suspect. And, yet, in following Held's various articles closely one finds that this histologist notwithstanding the disappearance of the refractive line of demarcation is able *even in adult stages* to distinguish the protoplasm which belongs to the terminal axone or collateral of the one neurone from the protoplasm of the cell-body or dendrite of the other. By a lucky hit Held seems to have discovered a method of staining certain minute particles (his neurosomes) in the ground substance of the protoplasm of the neurones—a method which stains them intensely and leaves the other structures but dimly or not at all tinged. It would seem that, according to his report, the neurosomes are far more closely aggregated in the axis-cylinder and especially in its terminal branches than they are in the protoplasm of the cell-body or of the dendrites of a neurone. Thus, in the olfactory glomeruli it is very easy to distinguish the axones of the Nn. olfactorii from the dendrites of the mitral cells and of the brush cells, both of which, as is well known, enter into the formation of these curious bodies. Again in the molecular layer of the cerebellar cortex Held's neurosome method outlines accurately the position and relations of the terminals of the axones which climb trellis-like along the trunks of the huge limbs of the cerebellar forest which is made up of the dendrites of the Purkinje cells. Held's contributions, therefore, far from disproving it, are confirmatory of the neurone-doctrine; and, as a matter of fact, Held represents one of the ablest of the German adherents of the doctrine.

Adverting finally to the investigations of Apáthy, one finds in them the greatest stumbling block to those who perhaps an account of lack of familiarity with the exact principles of the neurone-doctrine and the history of its foundation incline to think that it is jeopardized. A skilled technician, well known to the biological world as the author of a treatise on the technique of animal morphology, and generally recognized as a most careful and painstaking worker at the Naples Marine Laboratory, after several years of specially directed study during which he has elaborated an entirely new mode of bringing certain finer structures within the nerve cells into view, has finally in a long article of more than 200 pages presented the main results of his investigations upon the nervous tissues

to the scientific world. While Apáthy has studied vertebrate tissues to a limited extent the majority of his observations have been made upon invertebrates, especially upon the leech and the earthworm. His technical methods need not be entered into here. Suffice it to say that for the most part his technique is original with himself, consisting in addition to a method of staining with methylene blue of an haematein method, and especially modified gold-chloride method which can be applied not only to fresh tissues, but to fixed tissues as well. To sum up his views in a nutshell, Apàthy has been convinced for some twelve years that the nervous system is composed of two varieties of cellular elements entirely different from each other—nerve-cells and ganglion cells. The nerve-cells, the architecture of which is quite in accord with that of muscle-cells, give rise, he thinks, to neuro-fibrils. A neuro-fibril in turn passes out of a process of a nerve-cell and then goes through a number of ganglion cells and ultimately after leaving the last ganglion cell with which it is connected passes more or less directly to a muscular fibre or to a sensory cell. The neuro-fibrils are, as conducting substance for the nerve-cells, what the muscle-fibrillae are as contractile substance for the muscle-cells. The pathways to be followed by the neuro-fibrils are predestined from the earliest embryonic stages, for they correspond, according to Apàthy, to the intercellular protoplasmic bridges.

Each neuro-fibril is, Apàthy states, made up of a large number, near its origin at any rate, of "elementary fibrils," and in the course which it follows elementary fibrillae are being given off at short intervals until finally the neuro-fibril itself may be reduced to a single elementary fibril.

The ganglion cells through which the neuro-fibrils pass, and which, if Apàthy is correct, supply the force which is to be conducted along them, appear to be complicated in structure. Thus in the leech the body of the cell can be divided into a series of more or less concentric zones. At the periphery are two zones, an outer and an inner, consisting of neuroglia, which are more or less separated from the cell body proper by the so-called outer alveolar zone. The periphery of the cell proper consists of an outer chromatic zone, inside which is an 'inner alveolar zone." Inside this again is an inner chromatic zone, which in turn is separated from the nucleus by the so-called-perinuclear zone. In the latter is situated a small centrosome-like body. Inside the ganglion cells a reticulum of fine fibrils derived from the neuro-fibrils in transit can be stained a beautiful deep violet color by Apàthy's chloride of gold method,

According to the size of the cells and to the arrangement of the neural reticulum inside, Apáthy distinguishes in the leech two main types; (1) the large ganglion cell and (2) the small ganglion cell. It is to be borne in mind that the ganglion cells in this animal are unipolar, the so-called stem processes giving off near the cell-body a number of processes which appear to be comparable to the dendrites of higher forms, the main continuation of the process representing the axome.

In the large type of ganglion cell the relations are described by Apáthy somewhat as follows: the neuro-fibrils arriving by way of the pyriform process of the cell enter the protoplasm breaking up into elementary fibrils which diverge meridionally to ramify in the external chromatic

zone. (The cells of this type possess no distinct internal chromatic zone.) Free anastomosis among the elementary fibrils inside the ganglion cell appears to be the rule. Having arrived at the side of the cell most distant from the stem-process the neuro-fibrils turn about and again plunge through the cell converging to pass out of it by way of the pyriform process, which is thus seen to carry two sets of neuro-fibrillae, which Apáthy believes serve in the one case for cellulipetal and in the other for cellulifugal conduction.

In the small type of ganglion cell the relations, it would appear, are somewhat different. Here the pyriform stem-process contains a single thick neuro-fibril in its centre which Apáthy assumes to be cellulifugal and motor, and a number of finer neuro-fibrils peripherally placed which he believes to be cellulipetal and sensory. He describes the finer peripheral neuro-fibrils as follows: They are seen to enter the cell-body and passing out to the peripheral part of its protoplasm there to break up into a complicated plexus composed of anastomosing elementary fibrils in the outer chromatic zone. From this peripheral plexus there pass through the "inner alveolar" zone radial branches to the internal chromatic zone, in which is to be seen another fine plexus of elementary fibrils which anastomosing and converging finally form the single strong motor neuro-fibril, which passes out of the cell through the very centre of its pyriform process.

In other animals studied by Apáthy there are cells with definite dendrites entirely separate from the axone and in these the celluliptal neuro-fibrils enter by way of the dendrites, ramify and anastomose freely inside the cell body and then, re-uniting, take their exit from the cell by way of the axone. Similar relations exist in the ganglion cells of the vertebrates which he has studied thus far. His descriptions of the neuroglia and the relations of the glia cells to the nerve-cells, interesting as they are, need not now detain us since they have but little bearing, if any, upon the topic under discussion.

As to the relations of the neuro-fibrils to sensory surfaces on the one hand and muscular tissue on the other, Apáthy makes very definite statements, especially in the last chapter of his article. A neuro-fibril entering the cytoplasm of an epithelial cell of a sensory surface in the leech breaks up (very much as in a ganglion cell) into a finer reticulum composed of the elementary fibrils. A large number of the constituent fibrils, however, perhaps the majority, leave the cell in order to take part in the formation of a complicated interepithelial fibril plexus. For the interesting details concerning the innervation of the superficial epithelial cells and the subepidermal sense-cells, the original article should be consulted. In the muscular tissue, however, a very different distribution of the neuro-fibrils is encountered. A neuro-fibril here also, breaks up into elementary fibrils which ramify inside the muscle-cell. But although many of the fibrils emerge from it, instead of forming a complicated reticulum among the muscle-cells they pass on to enter and innervate other muscle-cells. The neuro-fibril of a single axone would, therefore, through its elementary fibrils, innervate perhaps a considerable number of muscle-cells.

One nerve-cell may, Apáthy states, be put into continuous relation by means of one or more primitive fibrils with several ganglion cells, and

one fibril can be connected with a number of sense cells. But while one ganglion cell may be connected with several nerve-cells, a sense-cell is never connected with more than one nerve-cell.

From what has been said, the main tenets of Apàthy may be gathered. And we must now ask whether granting all his findings, and even his theories, to be in accord with the facts, the neurone-doctrine would be nullified by them. Although the opinion has been expressed that it would have to be entirely given up, or very seriously modified, I must confess that such a view of the matter would seem to be, to say the least, premature. That the neurone-conception, as it has been held by many, would have to be materially altered there can be but little doubt, but many views of the neurone-conception and what Waldeyer actually defined it to be are by no means identical. Nor can it be admitted, as many authorities, including apparantly Apàthy himself, appear to assume that, in the research emanating from the Naples laboratory we have a confirmation of the doctrines of Gerlach, inasmuch as Gerlach's diffuse nerve network and its relation to axis cylinder processes and dendrites involved conceptions somewhat different from those which Apathy takes the responsibility of fathering. Apàthy's *Elementargitter*, however, stands very close to the conception of Gerlach.

It would seem, then, that were Apâthy's observations and theories entirely in accord with the facts, the neurone-doctrine as conceived by Waldeyer would not have to be seriously modified, much less abandoned. Furthermore, one would be far from willing to grant without further proof either that there is so much, as many seem to think, that is novel in his actual observations, or that the assumptions based on the findings especially with regard to function have the force of necessary postulates. Much of the apparent novelty of his results depends upon the facts that, in the first place he is dealing in the main with tissues, which are not very familiar to many neurologists, namely the nerve-cells and fibres of invertebrate animals, and in the second place his publications thus far consist principally of an objective description of his findings with particular methods devised by himself, and pay but little attention to the work of other investigators, so that the casual reader may, from lack of adequate comparative data, fail to distinguish between actually new discoveries, and descriptions which may without unfairness be found to coincide in many respects with those of other students working with different methods. I feel convinced that when Apathy fulfils his promise of supplying us with a still more lengthy communication; in which the results of other investigators are to be compared with his own and properly valued, that those who have been inclined to look upon his observations as entirely unique, will be disabused of their error. That many of his observations are entirely new must be frankly admitted; that the technique he has introduced is altogether original and evidently highly valuable and well worthy of extensive application and widespread control, must be freely granted. The remarks here made are not intended to be a critique of the work of Apàthy, but rather to counteract an impression which seems to be gaining ground that the whole or, at least, a large part of our previous ideas concerning the architecture of the

nervous system have been subverted by the results of his studies, Are we not more just and, at the same time, kind to Apáthy if we simply accept, gratefully and for what they are worth, the wealth of new facts with which he has provided us, than we should be were we to give currency to the impression that they are entirely revolutionary, and out of accord with the great principles which sedate neurologists believe to be incontrovertibly established? All that I wish to say, and that without any desire to detract from the merit of his laborious researches, is that an attentive analysis of the actual findings of Apàthy shows that there is far less absolutely novel in them than many seem to imagine. For, when one thinks of it, the form of the cells in invertebrates has long been known, the unipolarity of the elements has been generally figured and described, the fact that the pyriform process corresponds to both axis-cylinder process and dendrites is stated in the text-books, the irregularity in the distribution of the "chromatic substance" in the cells is easy to make out in Nissl preparations, the existence of the so-called intercellular bridges, if not for the cells in the nervous system, at least for many of the cells of the body, if taught and demonstrated in every histological laboratory, and the fibrils in the processes and the reticula in the cell-body have been the object of study and the topic of discussion, too often of bitter polemic, for at least two generations. The very neuro-fibrils upon which Apàthy bases his doctrine were first seen, as the author himself states, by Kupffer. The essential novelties in Apàthy contributions, in addition to his modifications of technique, and his wonderful description of the details of the fibrillary appearances to be met with inside the cells stained by his methods, for which all must be deeply grateful, are his deductions and hypotheses, of which all, in my opinion, may be permitted, at least for the present, to be judiciously skeptical. How does he know, for example, that the structures which stain violet by his gold method actually represent the conducting-element in the nervous system? It may be true, but the Scotch verdict "not proven" is here most applicable. Again, how does he know that the nerve-cells build the conducting element, and that the ganglion cells supply the force to be conducted? These *may* be the functions of these two sets of elements, but we must not neglect to point out that the evidence is not yet convincing. And were it all true, is there any reason to doubt that neurones will continue to degenerate as units, as heretofore, that the nervous systems of our children will continue to be built up during development of repeatedly dividing neuroblasts in the same way with which we are familiar, or that Golgi's method in the thirtieth century will have lost its power of demonstrating here and there a particular nerve-unit or neurone in its entirety? Again would the confirmation of the existence of continuous fibrils or fibril-systems passing through a whole series of nerve elements necessarily militate against a unitary conception? I must say that I can see no reason why it should. We do not regard the connective tissues as any the less cellular, because they build white fibres, yellow elastic fibres and membranes and reticulum; we do not look upon the studies of Weigert and Mallory, which deal with neuroglia-fibrils and their relation to the neuroglia cells, as subversive of the doctrine that neuroglia cells exist, nor do we, because Kromayer and others have demonstrated, by particular

methods, fibres running through the bodies of a number of epithelial cells, cry out that the cell-doctrine must be given up. There may be units other than cells, and in all probability there are; there may be, and probably are, in the nervous system units other than those generally described, and it is important that we should find out all that there is to learn about them; but that the human body is made up largely of a mass of cells, and that the human nervous system is made up largely of great numbers of cell-units, the so-called neurones, would seem to be facts too firmly established, ever to be utterly overthrown.

THE USE OF MORPHINE IN BRIGHT'S DISEASE.

Sydney Ringer, of London, thus concludes a paper on this topic in the *Journal of the American Medical Association* of October 8, 1898. He says that Osler writes concerning uremia, "for the restlessness and delirium morphine is indispensable. Since its recommendation by Stephen Mackenzie in uremic states some years ago, the author has used this remedy extensively and can speak of its great value in these cases. He has never seen ill effects or any tendency to coma follow." Ringer's observations entirely confirm these statements, and yet the use of morphine in Bright's disease is denounced with little less than horror by most practitioners, though they all confess that they have never tried it —that, indeed, they dare not do so. Morphine hypodermically employed is of conspicuous benefit in the shortness of breath of uremia. This may be due to different causes. With some patients the compensatory hypertrophy gives way and they suffer from cardiac dyspnea, in all respects similar to that from valvular defects with insufficient compensation, notably sleep in aortic regurgitation. The paroxysmal shortness of breath prevents sleep; on falling asleep they are soon wakened by distress of breathing. The patient is compelled to start up in bed panting for air, or the sleep may be distressed end harassed by Cheyne-Stokes breathing. This distressing condition, whether due to deficient compensation in Bright's disease, or to valvular defects, is almost invariably relieved by hypordermic injections of morphine, and several hours' refreshing sleep are secured, to the great relief and comfort of the patient, who on the following day is refreshed, and takes, digests, and assimilates his food better. Morphine can scarcely be too highly recommended in such a condition, and although it does not cure, it delays the end and greatly lessens the distress of the declining days of life.

Uremic asthma, again, yields promptly to hypodermic injections of morphine. On the other hand, persistent distress of breathing may be due to dropsy, the lung being hampered by an abundant serous effusion into the cavity of the chest. It need scarcely be said that such a condition is not improved by the use of morphine.

The headache and sleeplessness occurring in uremic patients can generally be removed by the hypodermic injection of morphine. The writer has not given this treatment in uremic convulsions or coma, but he has largely used it in many cases of uremia with other troubles, and is sure that morphine may be given to such patients with every prospect of benefit and no risk of harm.

This, That and the Other

A Winter Remedy

That Codeine had an especial effect in cases of nervous coughs, and that it was capable of controlling excessive coughing in various lung affections, was noted before its true physiological action was understood. Later it was clear that its power as a nervous calmative was due, as Bartholow says, to its special action on the pneumogastric nerve.

Codeine stands apart from the rest of its group, in that it does not arrest secretion in the respiratory and intestinal tracts. In marked contrast is it in this respect to morphine. Morphine dries the mucous membrane of the respiratory tract to such a degree that the condition is often made worse by its use; while its effect on the intestinal tract is to produce constipation. There are none of these disagreeable effects attending the use of Codeine.

Antikamnia has stood the test of thorough experimental work, both in the laboratory and in actual practice; and is now generally accepted as the safest and surest of the coal-tar products.

"Antikamnia and Codeine Tablets," each containing 4¾ grains Antikamnia and ¼ grain Sulph. Codeine afford a very desirable mode of exhibiting these two valuable drugs. The proportions are those most frequently indicated in the various neuroses of the throat, as well as the coughs incident to lung affections.

Acute Inflammation of the Prostate Gland

The Journal of the American Medical Association contains a report on inflammation of the prostate gland, which was presented to The Section on Surgery and Anatomy at the Forty-ninth annual meeting of the American Medical Association, held at Denver, Colo., June, 1898, by Listen Homer Montgomery, M. D., of Chicago, Ills. His plan of treatment in acute inflammation of the prostate gland is to wash out the abscess cavity with hydrogen peroxid, give copious hot water enema and hot hip baths frequently, avoid morphine internally and advise care lest the patient strain at stool or during micturition. On the theory that toxins are retained in the circulation and within the gland and to prevent degeneration in the gland substance, he administers triticum repens or fluid extract tritipalm freely, combined with gum arabic or flaxseed infusion. Along with these remedies the mineral waters, particularly vichy with citrate of potash, go well together. Hydrate of chloral or this salt combined with antikamnia are the very best anodyne remedies to control pain and spasms of the neck of the bladder. These pharmacologic or medicinal remedies are the most logical to use in his judgment, while externally, applications of an inunction of 10 or 20 per cent iodoform, lanoline, as well as of mercury, are also of value.

Migraine—(Catarrhal.)

℞ Antikamnia and Codeine Tablets.....No. xii
Sig.—Crush and take one every three hours.

Grows in Favor

As the years go by there is one drug that constantly grows in favor. To the physician of the Transmississippi region it is probably doubtful if it is necessary to say that this remedy is antikamnia; as all have used it. But increasing experience demonstrates its adaptability to conditions other than at first advised. It is notably of value in ovarian and other pelvic pain. If you have not tried it in this class of cases, do so.

—*American Journal Surgery and Gynecol.*

The Canada Lancet

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Editorial.

CHRISTIAN SCIENCE.

Were it not for the fact that one or two prominent personages, noted for more than ordinary ability—Mr. Harold Frederic, for example—had fallen victims to the so-called "Christian Science" treatment of disease, one might suppose this doctrine to be one of those things which Divine providence permits in the great course of natural events to destroy "the unfit," and so let it pass as beneath the notice of a medical journal. Man, however, being in a large measure above nature, feels called upon to protect and endeavor to preserve human life in all its conditions. If it be really a fact that the leading disciples of this fad are sincere, one should have some pity for them. But when they put forth their blasphemous pretensions that they can heal "consumption in its last stages," "malignant tubercular diphtheria, and carious bones that could be indented by the finger," etc., as the high priestess, Mrs. Eddy, asserts that she has done, while they are at large and continue to ply their trade, one rather pities their misguided dupes; feeling at the same time that the leaders in this new psychic phenomenon of defective minds should be placed under confinement. The New York *Times*, of which paper Mr. Frederic was the London correspondent, in an editorial asks: "Why not enforce the law against these homicidal charlatans who prac-

tise their hocus-pocus on patients sick with typhoid fever, heart disease and consumption?" And further: "They kill, and, so far, kill unpunished. The experience of Massachusetts shows that it may be difficult to draft a statute that will net these pests. Common sense shows that new legislation is not needed. Existing law will protect the ignorant from their deadly impostures if it be enforced."

This has been tried, it appears, in Ontario, and failed. In Rhode Island, too, the supreme court decided that the acts of a defendant in a case did not constitute the practice of medicine. In Nebraska the court held that the practice, although not a practice of medicine as the term is usually understood, is a violation of the law, because it is a treatment of physical and moral ailments included in the definition of the practice of medicine by the express words of the statute.

It, therefore, seems that court decisions will depend largely, if not entirely, on the wording of statutes as to what constitutes medical practice. Would there be any chance to get the Ontario Medical Act so amended as to cover such cases?

In the case of Frederic's death, the *Law Journal* says: "The prosecution which followed on the verdict of the coroner's jury of manslaughter against the person who applied the Christian Science completely failed, the Justice refusing to commit."

In a case of Regina *v.* Senior the prisoner was a member of a sect known as the "Peculiar People," and was indicted for the manslaughter of his child by refusing, on account of his tenets, to provide medical aid. He was sentenced to four months' imprisonment with hard labor; the decision resting not on any medical statute, but on an Act for the Prevention of Cruelty to Children. It appeared that the court regarded the deprivation of proper medical treatment to be as criminal as the neglect to provide food.

A "christian scientist" in Cincinnatti, who allowed a man to die of typhoid fever, with only prayer as a course of treatment, it is reported, has just been convicted in the police court for practicing medicine without a licence.

It would seem that, while statutes may assist, the education of the public alone will entirely suppress this as well as other forms of quackery in medicine.

Dr. C. A. L. Reed, member of the Ohio State Medical Board, is conducting a spirited campaign against all sorts of medical quackery. In December last he gave an address on "Christian Science, a Sociological Study," before the Northwestern Ohio Medical Association. The Association passed a resolution "That Dr. Reed is hereby requested to submit his address. . . for publication in such form that it may become available, at small expense, to physicians, clergymen, educators, and others for distribution in their respective communities." The address has been published in a thirty-two page pamphlet, and its free distribution as indicated would doubtless assist in suppressing the evil. The St. Paul's *Medical Journal* says: "Within its pages is plenty of food for thought, and if it could be put into the hands of every intelligent layman, who has been tempted to lend his moral or financial support to these "perse-

cuted" healers, there would be many less places in the ranks vacant at the next roll-call of their supporters."

Dr. Reed concluded his address as follows: "Permit me to urge that, like the clergy, and like educators in general, the medical profession has a duty to perform in correcting the unfortunate conditions which I have delineated. Secure in their well-earned positions, physicians have a natural disposition to watch with good-natured interest these evanescent phases of ever-recurring phenomena. . . . Concerned, however, as they are with truth and humanity, duty demands that physicians, entrusted as they are, too, with the welfare of their respective communities, shall not hesitate to speak those words of knowledge that may correct the erring ways of misguided zeal, and protect the innocent from dangerous imposition."

Is it the duty of the profession in Canada to take some such action?

DEATH OF DR. GEORGE HEROD.

In the death of Dr. George Herod, of Guelph, Ont., which took place on Wednesday, January 25th, after a relapse from an attack of la grippe ending in pneumonia, the province of Ontario has lost one of its oldest practitioners and the city of Guelph one of its respected physicians.

The deceased was born in Blackburn, Lancashire, England, May 8th, 1827, and was educated at private and boarding schools in Mansfield and Birmingham. He came to Canada in 1840. He studied medicine under Drs. Orton and Wm. Clark and attended medical lectures at King's College, Toronto. He passed the Upper Canada Medical Board in July 1847. Dr. Herod then took charge of the Emigration Hospital at Hamilton, which he resigned the following year to commence practice at Georgetown, Halton County, where he remained until 1854, when he removed to Guelph and entered into partnership with the late Dr. Wm. Clark, M.P. He soon built up a good practice which in those days covered a radius of thirty miles.

Dr. Herod was County Coroner and Gaol Surgeon for 54 years and was appointed Surgeon to the Wellington Battalion of Volunteer Militia upon its organization. At the time of his death he was president of the Waterloo and Wellington Medical Association.

In his early years he took a deep interest in municipal affairs and in 1870 was elected Mayor of Guelph. In politics Dr. Herod was a staunch Conservative and did active work for the party.

He leaves one son and one daughter to mourn his loss, his wife having passed to the great beyond only about a year ago.

As an Analgesic in Myelitis—

℞ Ichthyol 0.50
Aquæ destil 10
M. S. Inject one cubic centimetre every second day.

—Dujardin-Beaumetz.

THERAPEUTIC HINTS.

Relief from Itching Due to Bites of Insects and Vermin is said to be obtained if several repeated applications of formalin be made to the spot, the fluid being allowed each time to evaporate. The smarting caused if the spot be excoriated is relieved by water. The soothing effect is immediate, and beyond a hardening of the skin no objective results will be noted.—*Gonin.*

The Rigidity of the Perineum.—SOUTHWORTH claims that local application of the following mixture will effectually hasten the relaxation of a rigid perineum during labor:

℞ Chloroform.....parts 2
Etheris.....
Eau de Cologne.. aa.....parts 1
M. Sig. External use.

For Bronchitis and Pulmonary Congestion.—Occurring in the course of grip in children, the following formulæ are recommended, the internal treatment being aided by the application of sinapisms and dry cups to the back:

1. ℞ Tinct. aconiti.....gtt. v-x
Sodii benzoatis.....gr. xv-xlv
Syr. lactucarii.....m. xv-℥iiss
Syr. aurantii flor.....℥v
Mucilag acaciæ.....℥iv
M. Sig. Two teaspoonfuls every two hours.

2. ℞ Ext. cinchonæ.....gr. xxx
Terpin hydratis.....gr. xv
Spts. vini gallici.....℥v
Syr. aurantii flor.....℥i
Aq. melissæ.....℥ii
M. Sig. Two teaspoonfuls every hour.

For Erythematous Lupus.—UNNA frequently employs medicated collodion painted over the affected area from two to four times a day. The collodion used for the preparation must have a neutral, not an acid reaction.

℞ Saponis viridis.....parts 2-4
Collodii flex.....parts 20.

℞ Saponis viridis
Ac. salicylici.. aa.....parts 2
Collodii flex.....parts 20.

To be used if the skin shows much irritation:

℞ Ichthyol.....parts 5
Collodii flex.....parts 20.

STOMATITIS IN SMOKERS—

℞ Salol 1
Tinct. catechu 2
Spir. menth. pip 50

M. S. A teaspoonful in a glass of warm water as a mouth wash.

IN THE BEGINNING OF PULMONARY TUBERCULOSIS—

℞ Hydrarg. bichlor 1
Aquæ destil 1,000

For subcutaneous injection in the suraspinous and infraspinous fossæ. Also useful in skin tuberculosis.—DUBOIS.

HAY ASTHMA, with cough and difficult expectoration following exposure—

℞ Ammon. chlorid ..... ʒ iv.
Tinct. hyoscyami,
Syr. scillæ comp,
Syr. senegæ,
Syr. tolutanæ ..... āā ʒ i.

M. S. Teaspoonful every three hours. —DR. ESHNER.

PELVIC CONGESTION—

℞ Magnes. sulphatis ..... ʒ viiss.
Ferri sulphatis ..... ʒ ij.
Manganesii sulphatis ..... ʒ ij.
Acid sulphur. dil ..... ♏ xlv.
Aquæ destil ..... ʒ iv.

M. S. A teaspoonful before breakfast in a wineglass of water.
—*Riforma Medica.*

WHOOPING-COUGH—

℞ Tinct. belladonnæ ..... ʒ ij.
Phenacetin ..... ʒ iij.
Spts. frumenti (q. s. solve phenacetin) ..... ʒ i.
Fld. ext. castaneæ ..... ʒ vi.

M. S. Teaspoonful every three hours until the face flushes; then every three, four, or six hours, as needed to control the cough, in a child of six years.

—DR. R. A. LANCASTER, *Florida Health Notes*, December, 1898.

LOCOMOTOR ATAXIA—

℞ Ferri lactatis ..... ℈ ij.-iv
Ext. cinchonæ ..... ʒ i.-℈ iv.
Ext. nucis vomicæ ..... gr. v.-xv.
Ext. gentianæ ..... q s.

M. ft. pil. xl. S. One or two as a tonic after three meals daily.
—ERB.

TUBERCULOUS LARYNGITIS—To relieve the vomiting following as the result of a morning's bout of coughing—

℞ Menthol,
Sulphuric ether,
Ol. pini sylvestris,
Tinct. iodii.....āā ℥ ij.
Tinct. benzoin. co.....ad ℥ ij.

M. S. Ten or more drops to be dropped on the sponge of an oro-nasal inhaler, to be worn indoors as often and as long as is convenient. —DR. W. FOWLER, *Intercolonial Medical Journal of Australasia*, October 20, 1898.

SIROP DE L'ENFANT JÉSUS.—This calming syrup, employed in young children for the relief of insomnia, convulsions, etc., is said to represent in each teaspoonful—

℞ Potass. brom.,
Sodii brom.,
Ammon brom,
Calcium brom.....āā 0.05 cgm.
Syr. belladonnæ (Fr. Cod.)..... 1 gm.
Syr. aurantii flor..... 5 "

Dose—One to four teaspoonfuls according to age.

—*Bull. de Pharm. de Lyon.*

GOUTY ARTHRITIS.—In the acute form rest is recommended, with local applications for the relief of pain. The following has been extensively used—

℞ Atropinæ..... gr. i.
Morphinæ..... gr. viij.
Aquæ..... ℥ i.

A piece of lint soaked with this lotion is laid over the inflamed point, covered with oiled silk and absorbent cotton. The constitutional treatment for gout must be carried out.—J. W. MACDONALD.

IRRITABLE BLADDER AFTER CONFINEMENT—

℞ Salol.
Tinct. hyoscyami.....āā ℥ ij.
Infus. buchu.....q.s. ad. ℥ vi.

M. S. Tablespoonful three times a day.

—DR. W. E. FOTHERGILL.

IN IRRITABLE UTERUS, DIFFUSE PELVIC PAINS, and hysterical neuroses in various parts of the body—

℞ Potassii bromidi.....℥ i.
Aquæ.....O i.

M. S. Use as a vaginal injection. —DR. MUNDE.

EPITOME OF CURRENT LITERATURE.

MEDICINE.

Tetany in Dilatation of the Stomach.—Sievers (*Berl. Klin. Woch.* August 1 and 8, 1898) reports two fatal cases of tetany. Tetany occurs most often in gastro-enteric disorders, though it is not limited to them In both the writer's cases it was associated with extreme dilatation of the stomach, caused by pyloric obstruction from the scars of old simple ulcers. In both the women, who were 21 and 42 years old, it began suddenly with cramps and pains in the limbs, and proved fatal within a few hours. There were carpo-pedal spasms, opisthotonos, tonic contractions in various muscles of the body, and fever. The abdominal muscles were flaccid. There was no trismus at first, though in one case it appeared towards the end, which was preceded also by cyanosis and unconsciousness.

The connection between tetany and dilatation of the stomach has lately aroused considerable attention. Though very rare there are nearly forty known cases. The combination is extremely fatal, the mortality being about 70 per cent. The etiology of tetany is obscure. That it is reflex is supported by the fact that it occurs in conjunction with intestinal worms and other irritants. Collier (*Lancet*, vol I, 1891, p. 1251) produced an attack by washing out the stomach, and others have seen the same effect by simply percussing over it. Frankl-Hochwart, from some of its symptoms, such as fever, etc, and from the fact that it occurs chiefly during certain months—December to April—supposed it to be a specific infective disease. The latest theory is that of Bouveret and Devic, who find that tetany of gastric origin, usually occurs in patients suffering from hypo secretion of hydrochloric acid, and have concluded that it is a complication of the chronic form of Reichmann's disease. Sievers has been able to collect twenty-seven fatal cases of tetany with gastric dilatation, which were examined post-mortem, and finds that in most cases the dilatation was secondary to stricture of the pylorus or duodenum from ulcers of their cicatrices. This might be thought to support the views of Bouveret and Devic as it is precisely in such cases that hyperchlorhydria occurs, but occasionally hydrochloric acid is found by analysis to be completely absent. Sometimes the stricture is due to cancer, when, according to modern views hydrochloric acid is deficient. The writer believes the most satisfactory theory to be that which explains the tetany by an anto-intoxication from the alimentary canal.

Xerostomia, or Mouth Dryness.—Since the publication of the earlier cases of this somewhat rare affection by Mr. Jonathan Hutchinson and the late Dr. Haddon, in the *Transactions of the Clinical Society of London* in 1888, some additional cases have been observed. Professor Fraser (*Edin. Hosp. Rep.*, 1893, Vol. I.) describes the case of a young woman who had suffered from dryness of the mouth for eighteen months. A

special feature was associated dryness of the nose and eye-balls, so that she could not shed tears. A tabulated account of all the cases recorded up to 1893 is given. Since that date a few further cases have been recorded. At a meeting of the Clinical Society of London, February 6, 1895, Battle (*Brit. Med. Jour*, London, February 16, 1895) showed a woman who had suffered for five years from mouth-dryness, which was associated with intermittent attacks of parotitis. Every three or four weeks during the last two years the submaxillary glands had become enlarged.

Dr. Thomas Harris, of Manchester, (*Am. Jour. Med. Sc.*, Phila., March, 1898), has reported another case, which he had previously shown in 1894. Both parotid glands had been enlarged during the three years in which the mouth-dryness had existed. They were uniformly enlarged and of firm consistence, and pain and tenderness were entirely absent. The orifices of the ducts appeared natural; firm pressure along the course of each expressed glairy mucus. There was no associated enlargement of the sublingual or submaxillary glands, nor was there any affection of the lymphatics. In this patient there was also a slight dryness of the mucous membrane of the nose, and both taste and smell were interfered with. There was an arrest of secretion of all the buccal glands. The patient, as in the majority of these cases, was a woman. Treatment by tonics, jaborandi, and the faradic current gave no relief.

In the *Lancet*, April 23, 1898, another case is reported by Dr. Sharp, of Whitby, in which a single woman, aged forty-one, had suffered for eighteen months from constant dryness of the mouth. Here certain features, which were present in the previous case, were absent; there was no interference with the secretion of tears, no enlargement of the parotid glands, no depreciation of the sense of taste or smell, and little, if any, dryness of the nose. The patient reported that she was improving with medium doses of mercuric iodide and quassia.—*Edin. Med. Jour.*

Rhizomelic Spondylosis.—P. Marie (*Rev. de Med.*, April 10, 1898) describes under this title a morbid entity, of which he has himself seen three examples, and has collected three cases from literature. As the name implies, the disease consists of ankylosis of the spine and of the limbs where they join the trunk. The spine is ankylosed, and there are bony outgrowths from the vertebræ which can be felt on the bodies of the cervical vertebræ when the fingers are introduced into the pharynx. The spinal ankylosis is more marked in the lumbar region and less in the neck. The spine becomes fixed in flexion, and hence considerable kyphosis results. The hip is more affected than the shoulder and is the only one in which true ankylosis results. In the shoulder there is very considerable limitation of movement; the arms cannot be raised to a right angle with the trunk. Although the patients do not complain of loss of movement in the knees, they are affected. The ribs become fixed, and respiration becomes abdominal. The thorax and the pelvis become markedly flattened. The nodes, described by Bouchard, occur on the fingers. eAll the cases have been in men, and the disease usually begins in early adult life. Rhizomelic spondylosis differs from severe cases of chronic

rheumatoid arthritis with ankylosis of the spine in not affecting the smaller joints. In hereditary traumatic kyphosis—a condition described by Marie and Aste—the kyphosis is curvilinear, and there is no affection of the joints. There is no evidence of any infection such as gonorrhœa. Marie has discovered a specimen in the Musee Dupuytren, which is probably an example of rhizomelic spondylosis. The spine is ankylosed, and shows bony growths and ossification of the supraspinous ligament, while the hip joints are affected. Bricon's case of multiple exostoses, hyperostoses, and synostoses of the spine in a cat probably belongs to the same category.—*Brit. Med. Jour.*

Treatment of "Black Eye"—Charles H. May (*Medical Record*, New York). The treatment of contusions of the lids depends upon whether the patient is seen early, when there is considerable swelling, or not until later, when the discoloration is the prominent feature. If he is seen early treatment consists of cold compresses or cooling or evaporating lotions. With these swelling and discoloration can be diminished, though not prevented entirely. If the patient is seen later hot compresses and massage are indicated to hasten the disappearance of the discoloration. Cold compresses are to be applied continuously at first, but not by means of an ice-bag or a piece of ice wrapped in a handkerchief and applied directly to the swollen lids, since these furnish too intense and too constant cold. Small compresses of lint or flannel, fourfold or sixfold measuring 1 and 1½ inch in diameter, are to be cooled upon a block of ice and then transferred to the lids. Several compresses of this sort are placed upon the ice and an exchange between the warm one on the lids, and a cool one from the ice is effected every minute or two. The cold compresses should not cover the nose, since acute coryza may be produced. They are to be applied during the first twenty-four hours, either continuously or every second or third hour for an hour at a time, depending upon the amount of redness and swelling. The sensations of the patient are usually a guide in determining the proper amount of cold; when the compresses are used too continuously they will become uncomfortable. Cooling and evaporating lotions are of service, though less potent than iced compresses. Both are to be applied cold, the compresses being wrung out and changed frequently. After twenty-four to forty-eight hours, when the swelling has subsided, the discoloration will show itself in a more pronounced manner; the lengthy duration of this stage can be cut short by hot applications and by massage. Flannel cloths are to be wrung out of hot water—as hot as can be borne—and allowed to lie upon the lids, being changed every minute or two; they are continued for an hour at a time, and applied three times a day, or oftener if it is especially desirable to hasten the return of the lids to a normal condition. When the skin is very sensitive, especially in women, a little white vaseline or any bland salve should be applied to the eye-lids previous to the use of hot compresses, to prevent soreness and irritation of the skin. Massage is a very satisfactory means of causing a rapid disappearance of the discoloration. The area involved is smeared with the ointment of the

yellow oxide of mercury or white vaseline, and then gentle massage is practised for five or ten minutes at a time, or longer, several times a day. If it is particularly desired to cause a very rapid disappearance of the blood stain, the hot compresses may be used continuously, and the massage for a number of hours. By these means the disfigurement may be almost, if not entirely removed within twenty-four hours, or even sooner, after the subsidence of the swelling.—*Brit. Med. Jour.*

Hysteria in a Male Simulating Chronic Ileus.—Strauss (*Berliner Klin. Wochenschrift*, Sept. 19, 1898) reports a case where a man, aged 29, after an accident in which one of the left ribs was broken, suffered from constipation. Ever since then he had suffered from chronic ileus with occasional attacks of apparently complete obstruction, with fœcal vomiting, etc. He had been in a number of hospitals, and laparotomy had been twice performed for obstruction, without, however, any abnormality being found. While in Senator's clinic he presented all the symptoms of chronic intestinal obstruction. At the same time he was evidently very neurotic; thus, there was anæsthesia of the left leg, the pharyngeal reflex was absent on the left side, and there were many other hysterical manifestations. This agreed with the histories taken in other hospitals, especially with the fact that after the two laparotomies he was cured for a time. It was difficult, however, to decide in what causal relation the various symptoms stood to the hysteria. Suddenly, after being treated for five months, the patient had a typical hysterical attack, when the enormous tympanites, which had persisted the whole five months with no evident improvement, disappeared, leaving the abdominal wall flaccid. Thirteen days later he left the hospital able to walk, and purgatives produced a daily evacuation, though previously they had had no effect. Strauss discusses the possible pathogenesis of the meteorism in detail, but leaves the question open.

Veal Pie Poisoning.—Paul Bowes, M.D.; Harold Ashton, L.R.C.P. & S (*Brit. Med. Jour.*, Nov. 5, p. 1456).—A confectioner made a batch of 160 veal pies, which were sold; 47 of those who ate them were made ill, and 4 died. The "incubation period" between eating the pies and the onset of the symptoms was fairly definite, from six to eight hours in most cases. The shortest "incubation period" was three hours, and the longest twenty-nine hours.

GASTRO-INTESTINAL SYMPTOMS.—In all cases diarrhœa was a prominent symptom; in some of the milder cases only a few very loose motions were passed; in the other extreme there was almost a constant evacuation of the bowels, from the onset to death or convalescence. There was considerable griping, but in only a few of the cases was the pain very severe. The fæces were, as a rule, watery. They were grass green at the commencement, but soon became very dark green. In some, blood was passed in small quantities. Vomiting occurred in all but two—at first yellowish green; afterwards, if persistent, merely the contents of the

stomach. Intense thirst was complained of. The tongue was dry, dark brown, thickly furred in the severe cases; furred but moist in the less severe. Herpes of the lips was fairly common, and in one or two a transient rash was present, with, in some cases, subsequent desquamation of the cuticle.

TEMPERATURE.—In all adult cases but one shivering was a most marked symptom, and whenever seen in the early stages the temperature was invariably raised. In some cases it bordered on hyperpyrexia; in most it ranged from 100° to 101°.

GENERAL SYMPTOMS.—Weakness of circulation was a most prominent feature. In the severe cases it was extreme, and lividity and coldness of extremities came on rapidly. In the mild cases, even for days afterwards, the patients felt tired and weary.

NERVOUS SYMPTOMS.—Severe cramp was rare; some complained of pains and stiffness in the calves of the legs, as if they had had cramp. Some had twitching pains in the legs. Headache was not usual. Drowsiness was very marked in at least two cases, but many were restless from exhaustion.

TREATMENT.—Practically resolved itself into the prevention of collapse. In the worst cases, medicines, effervescing or otherwise, were not retained. A mixture containing aq. sulph. dil, bismuth subnit., liq. morph. mur., and spir. chlorof. agreed well with the milder cases.

A necropsy in a fatal case showed patches of congestion of the mucous membrane of the small intestine, becoming more marked and frequent descending the intestines. The large intestine contained green fluid, and the lining membrane was throughout highly congested.

The pies were most virulent on the second and third days after cooking. Those which were eaten on the same day and the first day after cooking seem to have caused little or no ill-effects. No one complained of the taste or appearance of the pies, which had no smell whatever. The usual signs of a cold veal or pork pie being overkept are: 1. The jelly liquefies and the bottom of the pie becomes soft. 2. The meat becomes detached and loose in the paste. 3. A whitish mould appears on the meat, which may smell sour.

Fatal Wasp Sting.—F. H. Cooke, M.R.C.S., L.R.C.P. (*Brit. Med. Jour.* Nov. 5, p. 1429). A strong, healthy girl, aged 24, was stung by a wasp in the hand. A few minutes afterwards her face was very red. She complained of feeling numb all over, and of losing her sight; she then fainted. (These symptoms of numbness and blindness had also occurred on a previous occasion when she was stung.) Her face turned suddenly pallid and she expired in about twenty-five minutes. Well-authenticated cases of death due to syncope from wasp sting, etc., are rare.

Pressure Pouch of the Œsophagus.—An excellent article by Mr. Butlin (*Brit. Med. Jour.*, Jan. 1, 1898) summarises our knowledge of this condition. He has seen six patients suffering from the symptoms of pres-

sure-pouch of the œsophagus, and thinks that the condition is not so rare as has been generally imagined. Certain it is that the symptoms of the pouch are not generally known, and that it has been mistaken for pouching of the œsophagus above a stricture, whether innocent or malignant.

True pressure-pouch of the œsophagus is practically always situated at the back of the junction of the pharynx with the œsophagus; it opens into the gullet by a longitudinal opening, about an inch in length; it is more frequent in males than in females, and is not generally noticed until after forty years of age. Return of fragments of undigested food is the one constant symptom in every case—not immediately after the food has been taken, but many hours, or even days, afterwards. Pressure on the side of the neck in the posterior triangle (usually on the left side) causes fragments and liquids to return into the mouth. A bougie is arrested at a distance of about nine inches from the teeth. If the bougie be made of metal and slightly curved, its end may be made to project, so that it can be felt and seen, in the side of the neck (almost always the left side) behind the sterno-mastoid muscle. The pouch can be removed by operation, and the patient is then not only relieved of distressing symptoms, but also of the fear of death from slow starvation. But the operation is not free from difficulty and risk. A successful case is recorded in the paper already mentioned, and Mr. Butlin had previously published another in the *Medico-Chi. Trans.*, vol. lxxvi.

A case of pressure-pouch is recorded by G. A. Wright and R. Smith in the *Brit. Med. Jour.* for April 9, 1898, but in this instance the food could be returned by pressure on the *right* side of the neck. By emptying this pouch after every meal the patient has remained comfortable, and has been able to dispense with an operation for the present.—*Practitioner.*

Spinal Meningitis Complicating Measles.—Starck (*Jahrb. f. Kinderheilk. u. Physéc Erziehung*, vol. xlvii) reports the case of a girl, 8 years of age, who had a typical attack of measles. On the second day of the eruption she complained of great pain on movement. The nurse could not turn the patient on her side, because of the extreme tenderness. All movements of the legs and arms were followed by muscular spasms. The skin of the legs and arms was hyperæsthetic. The neck was stiff and the head slightly retracted. The temperature was 101° F. On the same evening there was retention of urine, which lasted several days. On the fifth day of the nervous symptoms the patient was able to pass urine, but with pain. On the seventh day the arms were free from pain; the legs were still attacked with painful spasms when touched. In a fortnight the child was able to walk a little; the legs were still stiff, but not painful. The knee-jerk was exaggerated. Micturition was painful, and the bowels only acted after purgatives. Ultimately the patient recovered. Measles seemed to be the only possible cause of this condition; all other diseases were carefully excluded, and the child's previous health had been excellent. The writer could not discover a similar case after an exhaustive search—*Brit. Med. Jour.*

The Value of Hydrochloric Acid in Sciatica, Etc.—We stated how the value of hydrochloric acid in sciatica had been discovered in our first number (p. 41.) The following confirmatory observations are of interest:—

R. A. Bayliss, M.R.C.S., L.R.C.P., writes (*Brit. Med. Jour.*, Nov. 19, p. 1550):—

Hydrochloric acid was applied over the course of the sciatic nerve or to the heels and feet, for the relief of pain in these parts in 26 cases; 16 had sciatica, which, in most instances, had defied every other treatment. Of these, 2 were completely cured, 11 were considerably relieved, and 3 were not improved. The remaining 10 patients were suffering from intractable pain in the heels and plantar region, the sequelæ of acute rheumatism, many gonorrhœal. Of these, 4 were quite cured, 1 was very much relieved, and 5 were not improved. The average number of applications was, for all the cases, 15. The duration of the treatment varied from one to five weeks. The strong acid of the *British Pharmacopœia* was painted on the skin at bedtime with a glass brush, in a series of lines about 2 or 3 inches long over the tender spots in the thigh and calf. When dry the limb was enveloped in cotton wool and loosely bandaged, and so left till the morning, when the patient was allowed to get up as usual. No vesication of the skin was produced, and the application was not attended with any pain. The acid may be applied every night or every other night, according to the effect produced on the skin, but it should be discontinued directly there is any sign of redness or irritation of the parts.

The Role of Secondary Infections in the Hæmorrhagic Forms of Eruptive Fevers.—Haushalter and Etienne (*Revue Mensuelle des maladies de l'Enfance*, June, 1898), have found that in variola hæmorrhagic complications appear to be due to a secondary infection of the streptococcus. This organism has been found in pure culture in the blood and viscera of a child dead of hæmorrhagic septicæmia appearing at the period of pustulation. But the most important argument is a distinct dissociation between variola and hæmorrhagic streptococcic septicæmia observed in a child affected with a discrete and very benign variola; during the convalescence fatal hæmorrhagic complications occurred as the result of the removal of the patient during the first period of the disease to a ward in which there were hæmorrhagic cases of the disease. Moreover, the hæmorrhagic form appeared to be independent of previous vaccinations.

A generalisation of these conclusions with reference to other infectious diseases was offered by a case showing a hæmorrhagic staphylococcic septicæmia during the desquamative stage of scarlatina.—*Amer. Jour. of Med. Sciences.*

Prolonged Diphtheria.—Golay (*Rev. Med. de la Suisse Rom.*) publishes a case of diphtheria which, as regards the persistent presence of

Lœffler's bacillus, lasted over 362 days. On March 11, 1896, the illness began; after an injection of antitoxin, the membrane had almost vanished on the 16th, and the child seemed quite well. Up till Aug. 6 virulent cultures of the bacillus were obtained (twenty-five examinations), at first pure, afterwards along with streptococci. From then till Sept. 2 cocci predominated, but a few short bacilli, proved experimentally to be diphtheritic, were present also. On Sept. 1 there was an acute relapse, with patches on the tonsils and B. diphtheriæ in pure culture. By Sept. 4, after an injection of serum (the third), the child was again cured clinically. On Sept 10 no bacilli were found microscopically, and the cure was thought to be complete (just six months from the beginning), and no more cultures were made. However, on Oct. 22, there was another acute relapse, and the short bacillus was present with streptococci. By Oct. 28 nothing could be discovered under the microscope, and the patient, a boy aged 5½ years, was again looked upon as cured, and no further cultures were made till Feb. 5, 1897, when there was a third acute relapse when short bacilli and streptococci were found. These persisted after a fourth injection of serum till March 9. From then till Sept., 1897, the child kept well, but, as the parents would not consent to any more bacteriological examinations, it is doubtful if he was finally cured even then. Golay thinks there can be no doubt that bacilli were never really absent. He concludes from this and other cases that (1) a fortnight's isolation after the disappearance of the false membrane, as advised in standard works, is totally inadequate; not till three or four examinations at intervals of a week have proved the complete absence of bacilli can cure be considered permanent; (2) the presence of Lœffler's bacillus between the attacks of angina does not alter the general health; (3) the prolonged presence of diphtheria bacilli after the disappearance of membrane is the rule rather than the exception, but probably this period is not so prolonged when there is an associated streptococcus infection; (4) local treatment should be abandoned entirely, as its only use is to torture the patient. In the case given above a good number of local applications recently recommended (by Lœffler and others) were tried thoroughly without the slightest effect.—*St. Louis Med. Jour.*, Nov.

Pemphigus and Measles.—Leo (*Vereins-Beilaqke der Deutschen Med. Wochenschrift*, Sept. 29, 1898) showed, before the *Niederrheinische Gesellschaft f. Natur. und Heilkunde*, three sisters, who, one after the other, were seized with pemphigus and measles. The pemphigus preceded the eruption of measles, which proved, in Leo's opinion, that the disease was not an abnormal form of measles (morbilli pemphigoidei), but a combination of the two infections.

Thrush of the Bladder—V. Frisch (*Wienklin. Woch.*, 1898, No. 39) records the case of an anæmic woman, aged 64, who had acute cystitis. She passed voluntarily 4 oz. of urine, and 12 oz. more were obtained by catheterisation, the last portions bubbling and containing a considerable

quantity of gas (pneumaturia). The urine showed a trace of albumen and 4 per cent. of sugar; it had a musty odor, and deposited a thick precipitate of white granular bodies, which were occasionally floated up to the surface by gas bubbles. Cystoscopic examination revealed more of these bodies attached to the wall of the bladder. Microscopically they consisted of a mycelium, which cultivation proved to be of the nature of thrush. The urine contained, also, yeast-cells, some bacteria, bladder-cells, and a very few pus corpuscles. Senator has published a case in which pneumaturia was produced by the alcoholic fermentation of diabetic urine, but in the present case the bulk of the gas resulted from the action of the bacterium coli. This has been previously recognized by Schnitzler. The bladder was washed out with a 1 in 1,000 solution of silver of nitrate, and the condition was practically cured in four weeks. Thrush of the bladder has not previously been described. Whence it came in this case could not be determined; the only plausible theory was that it had previously affected the vagina, whence it had disappeared.—*Brit. Med. Jour.*

Enteric Fever Running a Prolonged Course: Chills: Profuse Sweating: Angio-neurotic Œdema: Remarkable Elevations of Temperature without Complications.—C. F. Martin, B.A., M.D., and B. D. Gillies, M.D. (*Montreal Med. Jour.*, Oct., p. 743). A man, aged 30, entered hospital on the fifth day of the disease with the usual symptoms of typhoid fever, the pulse being 90 and the temperature 104°. Under baths, the temperature was readily reduced, rising, however, to a maximum of 102° or 103°, each day during the first ten days. Suddenly, on the 15th day, the temperature rose to 105°, and the patient had a severe rigor, followed by sweating. On the 23rd and 24th days the chills again recurred with profuse sweating. On the 26th and 27th days the temperature remained below 99·5°, and the patient was apparantly convalescing rapidly. On the following day again his temperature rose suddenly, and in forty-eight hours reached 104·3°. Rigors and sweating supervened, and he complained of severe pain in the right hypochondrium, for which no cause could be found. The temperature again subsided, but two days later very large swellings suddenly appeared over the left shoulder and left hip joint. These were red and tense, glistening and tender. They entirely subsided in two days. From that time on to the 32nd day the patient seemed to be gradually convalescing, and by the 51st day the evening temperature attained the normal. But the temperature again rose and reached 104·2°. The fever subsided as rapidly as it had appeared, and within a week was again normal. Once more, on the 64th day, the temperature rose from 98·2° to 105°; within a few hours rigors and sweating reappeared. In two days the temperature was normal, which it remained.

The case is particularly interesting, for it shows the uncommon complication of angio-neurotic œdema, and remarkable elevations of temperature due, not to any complication nor to typical relapse, but analogous to the temporary septic intoxications of the puerperal state. The fact that the pulse in the interval of these high temperatures remained slow and the general condition excellent, would seem to indicate that no serious complication had arisen.

Lupus Treated by Rontgen Rays.—Dr. J. Rudis-Jicisky (*Amer. X-Ray Jour.*, Oct., 1898), after treating a number of cases of lupus with Röntgen rays, in which very favorable results were obtained, has decided that the Röntgen rays constitute the best means for producing artificial inflammation, and converting unhealthy ulcerations into open healthy granulations. He reports the two following cases:—

First case was one of lupus erythematosus on the left leg, characterized by the appearance of pink patches covered with yellowish adherent scales. Having tested the tube with the screen, to see that it was in working order, and using an 8 in. coil, a series of short exposures were made. The healthy tissue was protected with stanoil, and the tube was placed at a distance of from 15 to 18 in. At first there were traces of brownish discoloration of the skin. After the first application the infiltration began to diminish. Later, general inflammatory action was established, and the unhealthy ulcerations assumed the appearance of healthy granulations. The patient was completely cured.

Second case.—Lupus vulgaris on the right side of the face, which began with the appearance of yellowish deep papules and gradually extended, forming irregular ulcerative patches. The Röntgen rays were used with marked beneficial effect.

Vicarious Urination?—Dr. Rice (*Canadian Lancet*, Oct., 1898) reports a curious case. The patient, aged 30, of a nervous temperament and rather weak intellect, three years ago had an attack of cystitis, with complete atony of the bladder, of three weeks' duration, necessitating the use of the catheter during that period. The attack gradually subsided, though considerable tenderness remained for some time. Twelve months after this attack, she suffered from involuntary twitchings, emanating from the dorsal region and extending over the whole body; there was considerable tenderness over the spine. These twitchings, or spasms, were so severe as to confine her to bed for several weeks. Accompanying this attack were discolorations of the right leg and thigh, extending almost entirely over the limb, but without tenderness. After a few weeks they gradually disappeared, and the patient regained her ordinary health. A year ago the atony of the bladder returned, and the patient was again obliged to resort to the use of the catheter three times a day, about half an ounce being drawn each time. The general heath suffered, the bowels were constipated, appetite impaired, there were mucous patches in the mouth, and the breath was foul. Treatment failed to relieve these abnormal conditions; the twitchings returned and continued. The feet began to swell slightly, the secretion of the bladder gradually diminished, but was compensated for by an exudation of fluid from the anterior portions of the lower limbs between the knee and ankle. This fluid was voided regularly three times a day, the amount gradually increasing until it averaged from thirty to forty ounces per day. There was no abrasion or discoloration of the skin, and no œdema was present. The fluid simply oozed from the skin. The patient would realize that the flow was about to begin, and would place her feet upon a stool and a basin beneath her

heels. The fluid was of an amber color, similar to healthy urine, with a specific gravity of 1010. It had a strong smell of urine upon boiling, with a distinct ammoniacal smell after standing. Examination showed the presence of uric acid; albumen and sugar were absent. After this peculiar condition became established, the patient's health rapidly improved and became fairly good; so that she had little to complain of except the inconvenience caused by this peculiar phenomenon. This condition lasted about two months, when, after an unusually large quantity of fluid had been passed, it ceased altogether, and urine again began to pass through the uretha. The patient again became very ill, and spasms reappeared accompanied by headache, swelling of the feet, and great swelling of the face. These symptoms lasted about a week, then gradually disappeared, and the patient regained her usual health, which has continued until the present time. Dr. Rice vouches for the correct history of the case, and was present upon one occasion when the fluid was voided in the peculiar manner described. He naturally asks, Was this vicarious urination? If so, how is it to be explained? Through what channel did it travel? The fluid certainly stood the tests of urine, and its elimination enabled the patient to live.

Unilateral Excision of the Thyroid Gland in Graves' Disease.—Wolff (*Mittheilungen aus den Grenzgebieten der Medicin und Chir.*, Bd. III. Hft. 1) mentions the conflicting opinions which are held as to the value of unilateral excision of the thyroid gland for exophthalmic goître, and reports some cases of his own. In one of these the result was brilliant. The woman, who at the time of the operation was extremely emaciated, and had derived no benefit from any drugs, five and a half years later was in robust health, and had had two children, though exophthalmus was still present. His nine other cases show that a favorable result may be expected, even in the worst cases, which have derived no benefit from medicine, though it does not follow in all. Thus, out of his nine cases, six were benefited, one had a severe relapse, and two died.

Splenectomy in Malaria.—Laccetti (*Giorn. Internaz. delle Scienze Med.*, Fasc. 1, 1898) reports a case where he removed an enlarged malarial spleen. Six days later an intermittent fever appeared, which soon yielded to quinine injections. This was probably due to the sporulation of the malarial parasite, which, according to P. s, may remain latent in the blood for months. The patient experienced also violent pains in the long bones, which it is suggested were due to a vicarious action of the bone-marrow. Laccetti states that the simple congested spleens found in chronic malari are reduced by quinine or vaso-constrictor drugs—such as arsenic, strychnine, ergotine—or electricity; when, however, there is a hypertrophic interstitial splenitis, splenctomy is indicated, especially if the enlarged spleen is painful.

Maragliano's Anti-Tubercle Serum.—Ulrich (*Therapeutische Monatshefte*, Oct., p. 547). Dr. Ulrich gives notes of 7 cases treated with Maragliano's serum, including 3 of tuberculosis of the lung alone, 2 in which both lungs and larynx were involved, one of Pott's disease with psoas-abscesses, and one of advanced tuberculosis of lungs, testicle, and ethmoid bone, with probable lardaceous disease. No very definite decision can be arrived at from the results recorded. The most marked influence of the remedy appeared to be exercised on the temperature, which became normal during the administration of the serum. In one case in which injections were practised on alternate days the temperature remained normal on the days on which the remedy was applied, but rose on the intermediate days. In only one case did tubercle bacilli cease to appear in the sputum: in another they were expectorated in clumps, as if the serum had had the effect of "agglutinating" them. No change was observed in the laryngeal affection in either case, but the patients in nearly all cases professed to feel some subjective improvement. In one instance an urticarial rash followed the injection, as is known to occur also after injection of anti-diphtheritic serum.

To DISINFECT THE SKIN before inserting the needle and for cleansing the operator's hands—

℞ Lysol 2
Water 100

LUPUS—

℞ Sod. sulphoichthyolat 2
Aquæ 100
M. S. Inject 1 c. c.

—UNNA

Publishers' Department.

We desire to call special attention to Parke, Davis & Company's Glycerinated Vacine Virus. Put up in glass tubes, its activity is assured by physiological tests, and the greatest possible care is taken to render it perfectly aseptic. It is put up in individual tubes, securely sealed, $1.00 per case of ten tubes.

The New York Pharmaceutical Association, through their agent, Mr. Gibson, 88 Wellington St., Toronto, are again sampling the profession with their elegant preparations, the Lactophine Elixir with Gentian and Iron, also with Bismuth. They are, indeed, most palatable preparations, and should he largely prescribed by the profession.

Liquor Ferri Albuminatis (Lett's). Whilst Albuminate of Iron has for several years been prescribed by physicians throughout Canada, it has been found that the high price and deterioration in quality of some of those preparations on the market, together with some other objectionable features has been a deterrent to its continued use. Lett's preparation of this valuable Salt of Iron entirely overcomes the objections hitherto obtaining, and its value as a chalybete placed beyond the peradventure of a doubt.

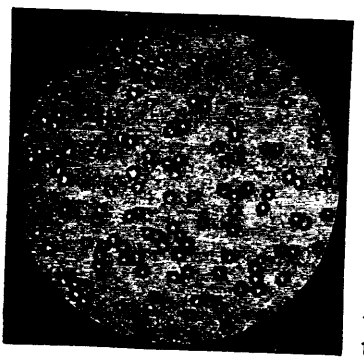
"The greatest therapeutic discovery of the age, and of the ages, is that where we cannot produce good blood we can introduce it."

What is Hæmatherapy?

A New Thing—and a New Name which, though literally translated (Blood Treatment), may not convey to every one a definite idea. It is a treatment which consists in opposing to a condition of disease the very power—good and sufficient Blood—that would naturally prevent it, that would still cure it spontaneously, and that actually does cure it spontaneously, wherever the blood-making work of the system is perfectly efficient; and therefore also *will* cure it, if a deficiency of the vital element be supplied from without, under proper medical treatment.

That Blood is such a power as here described, is an undisputed physiological fact Its transmission from one animated organism to another, for the purpose of supplying a defect in the latter, is the substance of the Blood Treatment; and How to Do this, in different cases, is the form or description of the same. Blood may be taken from a healthy bullock (arterial blood—elaborated with due scientific skill); or it may be obtained in the well-attested living conserve known as bovinine, from any druggist; and may be introduced into the veins of the patient in either of four ways, that may be most suitable to the case: viz.: by the mouth and stomach; by injection, with one-third salt water, high up in the rectum; by hypodermical injection; or by topical application to any accessible lesion.

A FILM OF BOVININE:
Showing the Blood-corpuscles Intact.



Micro-photographed
by Prof. R. R. Andrews, M.D.

THE CURE OF PULMONARY CONSUMPTION

is one of the latest and most wonderful developments of Blood Power—introduced mainly by the mouth, and sometimes also by spraying bovinine into the trachea by an atomizer. Every week of judicious internal blood treatment, with proper medical and hygienic care, has resulted in steady improvement as to all symptoms, with scarcely an instance of check, much less of relapse, until complete apparent cure, and that in the more advanced stages of the disease. As further examples, may be mentioned: Anæmia. Cholera Infantum, Typhoid Fever, Hæmorrhagic Collapse, and many other of the most dangerous and aggravated diseases.

IN SURGERY: A CHRONIC ULCER,

of no matter how long standing or obstinate and aggravated character, can be cured with certainty—at least, the first instance of failure has yet to be heard of—by constant application of bovinine to the wound with proper surgical treatment and sterilization. Such cases are usually cured in from four to six weeks. So of traumatic injuries of all kinds; carbuncles, fistulas, abscesses, and even gangrene

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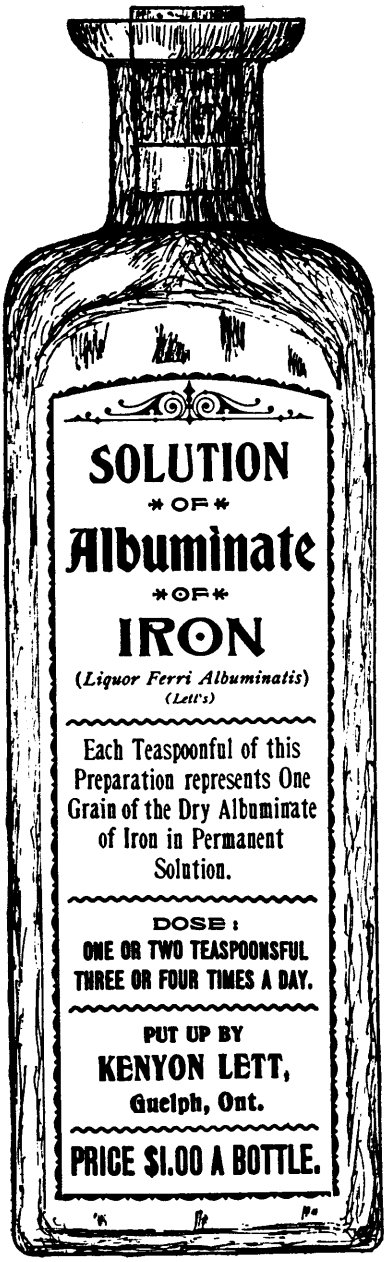

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Powd. Capsicum, 1-10 gr.
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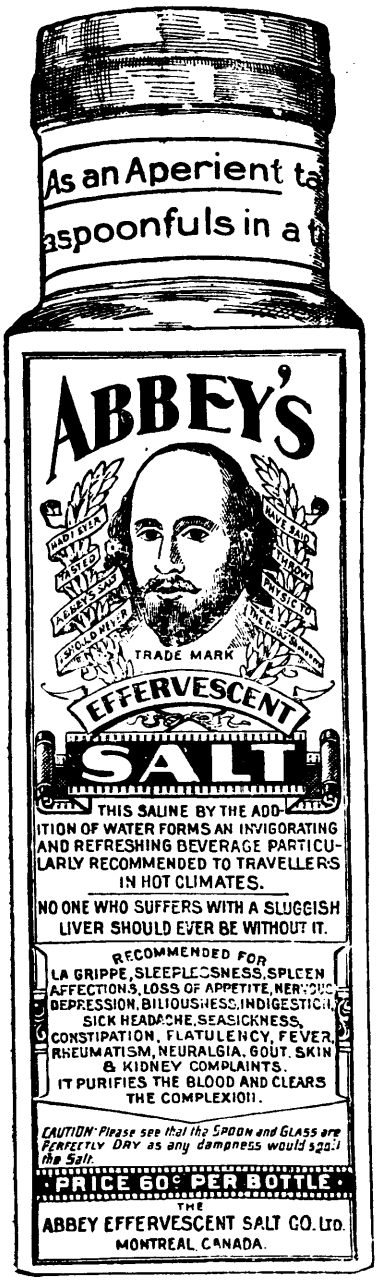

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