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Original Articles

No paper published, or to be published elsewhere as original, will be accepted in this department.

ACNE VULGARIS AND ITS RATIONAL TREATMENT.*

BY GRAHAM CHAMBERS, B.A., B.M.,

Dermatologist, St. Michael's Hospital; Lecturer in Dermatology Woman's Medical College;
Assistant Physician, Toronto General Hospital.

Acne vulgaris is a chronic affection of the skin, generally limited to the face, neck and shoulders. It is possible for the disease to exist on any part of the body where sebaceous glands are to be found, but it is rarely seen on the scalp and the extremities.

Age is an important factor in its etiology and course, as it is essentially a disease of adolescence and even if untreated tends in the course of years to disappear.

The first stage of the disease is characterized by a hyperkeratosis of the epidermis which affects not only the surface of the skin but also the mouths of the follicles and sebaceous ducts, giving rise to comedones. Comedones are made up of epidermal scales, generally arranged in concentric layers around a core of sebum. The outer end is usually colored black, which is due partly to deposit of pigment and partly to dirt. The hyperkeratosis appears to be due to a slow process of cornification, as both the granular and corneous layers of the epidermis are thickened, whilst the mucous layer remains normal. A comedo is sometimes thrown off, but it is more frequently held in position by the constricted orifice of the follicle, thus preventing the escape of sebum.

* Written specially for the DOMINION MEDICAL MONTHLY.

The unobstructed, as well as the sudoriparous glands are more than normally active, giving rise to a hyperidrosis oleosa which is generally a characteristic feature of this disease. The skin in these cases is usually anæmic and more adherent than normal to the subcutaneous tissue. Another symptom which I have noticed in many cases is the facility by which an inflammatory œdema may be produced by slight irritation, such as an unsuccessful attempt at the removal of a comedo.

If the comedo is not removed a folliculitis or peri-folliculitis is apt to be set up, giving rise to papules, nodules, and pustules, which together with comedones are the characteristic lesions of this disease. The form of the lesion depends, to a certain extent, upon the structure of the comedones as well as the thickness of the skin. When the hyperkeratosis of the epidermis is very marked the inflammation is frequently deeply seated and extends beyond the gland, producing a hard, purplish, red papule or nodule, which quickly suppurates, but rarely ruptures. This is the type of the disease known as acne indurata. This form frequently gives rise to cicatrices and upon these keloid growths sometimes appear. The terms acne punctata, acne simplex, acne pustulosa, are applied to the more superficial forms and are useful to designate clinical varieties of the disease. Acne punctata is used when comedones are visible in the centres of the papules and pustules, whilst acne simplex is applied to the disease when the comedones are invisible to the naked eye. When the lesions of either form are as large as small peas and the inflammation more marked, then the name acne pustulosa is used.

The cause of the inflammation in acne vulgaris is not definitely settled. The majority of dermatologists believe it is due to pus germs. This view is supported by the fact that staphylococci are always found in the suppurative stage. Unna is of the opinion that a special form of a bacillus, which he has invariably found at the inner end of the comedo, is the cause both of the inflammation and the suppuration. All investigators agree that the desmodex folliculorum, which is frequently found in comedones, takes no part in the etiology of the disease.

The foregoing description of the disease limits the field of acne vulgaris to a folliculitis or peri-folliculitis following a hyperkeratosis of the epidermis and comedones, and therefore would not apply to such diseases as iodine acne, bromine acne, acne cachecticorum, acne varioliformis.

Treatment.—The treatment of acne vulgaris requires both local and general measures. Local remedies should be directed towards the removal of comedones, to reduce the hyperkeratosis of the epidermis by hastening cornification, and to disinfect the skin ;

whilst constitutional treatment should be used for any systemic disturbance which may reflexly affect the parts.

The writer generally commences treatment of a case of acne by ordering a strong keratolytic ointment such as the following :

℞ Resorcin.....	ʒi.
Sulphur	ʒis.
Acid salicylic	ʒss.
Vaseline.....	ʒi.

Sig. : Apply every night, after having thoroughly scoured the face with tincture of green soap and water.

In the morning the ointment should be washed off and cold cream or some dusting powder applied during the day.

The above ointment is best made by melting the resorcin in the vaseline, otherwise it is gritty and very irritating. When this has been applied for a few days the skin becomes more or less inflamed and scaly. If the inflammation becomes too intense the strength of the ointment should be reduced.

Strong preparations of resorcin have a two-fold action, one causing exfoliation, the other hastening cornification and producing a firmer and harder corneous layer. Salicylic acid hastens exfoliation but does not quicken cornification. Sulphur acts similarly to resorcin, but, in addition, appears to have a direct restorative effect upon the glands.

In some cases the ointment seems to have a better result if the salicylic acid is omitted. This preparation should be applied every night for a month or six weeks, according to the severity of the case. If at any time the parts should become highly inflamed, cold cream should be applied until the inflammation has subsided, when the regular treatment should be resumed.

The next indication in the treatment of this disease is the removal of comedones and the lancing of papules, nodules and pustules. I have always found the comedones much more easily expressed after the ointment has been applied for a week or fortnight than they were before treatment. This is no doubt due to the thinning of the skin, thus removing the constrictions at the mouths of the follicles. This part of the treatment should be performed by the physician himself as the results are much better than when it is left to the patient. Extreme care should be exercised in order that the comedones, both with and without black heads, should be removed as completely as possible and with little injury to the affected parts. At first this treatment is required twice a week ; but soon once a week and then once a fortnight will be found sufficient.

When the face is so much improved that only a few papules are appearing, then all that is required is an antiseptic wash such as 1 in 700 of bichloride of mercury, or 1 in 1,000 of formaldehyde. The writer has frequently used a preparation which is sometimes known as white lotion for the same purpose. It is made up as follows:

℞	Potassæ sulphuratæ.....	}	āā	℥ i.
	Zinci sulphat			
	Sulphur			℥ ss.
	Aquæ rosæ			ad ℥ iv.

M. Sig.: Apply every night.

The constitutional treatment will vary with the nature of the systemic disturbances. Diseases of the alimentary tract should receive particular attention. Constipation, when present, should be relieved by change of diet and, if this is not sufficient, by laxatives such as cascara sagrada, aloin, etc. When the constipation is associated with anemia, Startin's mixture will be found very useful. The diet should be plain and unstimulating, and should be selected to suit each case. Tea, coffee, and alcoholic beverages are, as a rule, contra-indicated. Iron, arsenic and strychnine are most useful in many cases where debility and anemia are present, but arsenic is contra-indicated where the lesions are very irritable. Sulphide of calcium is highly recommended by some physicians when suppuration is a prominent symptom. The writer has made use of it in a number of cases and has not noticed any benefit from its use. Cod liver oil will be found useful in patients suffering from scrofula. Plenty of fresh air and active exercise are two of the best tonics to be recommended to patients suffering from this disease. Cold sponging of the whole body every morning, followed by rubbing with a course towel, is also a remedy worthy of trial.

The prognosis is good as far as a cure is concerned, but relapses are apt to occur. If care is taken in preventive treatment these will never amount to anything more than the appearance of a few lesions. The writer has treated between seventy-five and a hundred cases during the last three years by the foregoing method and cannot recollect a case where close attention was directed to the treatment in which a complete cure or a cure subject to slight relapses was not effected.

TRAUMATIC TETANUS (OR LOOKJAW) AS A GERM
DISEASE, WITH TREATMENT BY INTERNAL
ANTISEPSIS.—REPORTS OF A CASE OF
RECOVERY IN A HORSE.*

—
BY DR. W. R. ROOME.
—

The subject, which I have chosen to write a short article upon to read to you to-night, happily is one not often met with in general practices. Still, statistics show that it is on the increase. viz.: Traumatic Tetanus. Works on veterinary science state that this disease or malady is often met with in the dumb animal, especially the horse, and if the germs or bacilli are the same as those which produce it in the human being, like tuberculosis, animals may be a source of spreading the infection. Having had my driving horse seized with a severe attack of this malady a short time ago, I treated it with internal antiseptics and anti-spasmodics. In discussing this malady I trust you will pardon me if I refer to this case, it being that of a horse, but as most of our physiological and bacteriological experiments have to be made upon the dumb animal, this is my apology. The treatment chosen in this case having proved successful, the horse having made a good recovery, I thought the subject would be of interest to you, and at the same time open for discussion not only tetanus but other forms of micro-organism and their proper treatment.

Sir John Lister, in 1867, first gave to the world his antiseptic method in the treatment of wounds and the management of surgical operations. This marked the beginning of an epoch in surgery which has been an incalculable benefit to the human race. Since then surgery has made rapid strides; in fact, greater advancement has been made in surgery during the past thirty years than had been done for centuries before. I am sorry to have to admit that the science of practical medicine has not kept pace. Drug therapy has rather been on the decline, which perhaps is partially due to the uncertainty as to the cause and origin of many of our diseases, as within the past few years it is being so ably demonstrated by our modern bacteriologists that one disease after another can be traced to be of microbic origin. In fact, it seems

* Read at meeting of the Medical Association of London, Monday, February 13th.

to be the trend of the best scientific thought of to-day that all diseases are due to a specific germ, and in that case our therapeutics and materia medica will require to undergo a decided change, as our therapeutics and present knowledge of materia medica as to the cure of disease must yet be classed as somewhat empirical and is hardly up to the time. If the physician had been able to keep pace with the surgeon (remember I am not saying that the ground for discovery was as easily traversed) in discovering remedies, that he could have obtained by internal therapeutics anything like similar results which the modern surgeon has obtained by means of external antiseptics, then the practice of medicine might rank well as an exact science, but until then with those who believe in the bacteriological theory as to the cause and origin of disease it must remain open to empiricism.

Formerly, the cause of tetanus was supposed to be due to some abnormal condition of the nerves and their peripheral centres. During the past few years bacteriologists have been able to fully demonstrate that tetanus is a germ disease, therefore little need be said as to its cause—bodily injuries of any kind, from the slightest to the most severe, which are exposed and open to inoculation of the tetanic germ or bacilli. Formerly it was considered that injuries to the palmer surface of either the foot or hand near the thumb or great toe, was more susceptible to producing tetanus than any other part of the body or limbs. But that could be easily accounted for, as those parts are the most exposed to dirt or dust, the propagating grounds for the tetanus bacilli. The only affection which tetanus might be confounded with would be hysteria and strychnine poisoning. The former by close observation could readily be discerned; the latter is somewhat similar, only strychnine poisoning the spasms being somewhat tonic, but only lasting for a short time, with complete relaxation between. In traumatic tetanus the spasms are tonic in every sense. It is a disease which consists in an almost continuous rigid contraction of the involuntary muscles without but little relaxation or alteration. It is also characterized by closing of the jaws. According to statistics, tetanus is one of the most fatal maladies. The tetanus germ is one of the deadliest known, spreads rapidly, and generally with fatal results. All the writers on the subject which I have had a chance to peruse agree that few cases of traumatic tetanus recover.

The morbid anatomy and pathology of tetanus seems to have been very obscure, as the results of post-mortem of patients who have died from tetanus have been very unsatisfactory. Tetanus, like hydrophobia, seems to be a specific constitutional disease, occurring without any appreciable local signs or symptoms, and whether the great mortality in this disease is due to the presence

of the tetanus germ or bacilli in the circulating fluids, or to their toxin formed at the seat of injury, where the inoculation took place, and carried through the system, or to the conjoined effects of the bacilli and toxin passing through circulation. This is a question which is still open for discussion, and it may be some time before pathologists and bacteriologists may be able to demonstrate it satisfactorily. With our present knowledge of the disease the treatment must be somewhat empirical as whether we consider the tonic muscular spasms are produced by the presence of bacteria in the circulating fluids, or from the poisonous toxins generated at the place of inoculation or their conjoined effect. The question then presents itself is, Have we any therapeutic agent by which those pathological changes or conditions can be combated? Bacteriologists have been able to show that wherever there are living microbes soluble poisons are found, products of these secretions. They have also been able to demonstrate that certain products of bacilli culture are poisonous to the very germ that produce them. Prof. Koch, acting upon this theory, sought to destroy tubercular bacilli by means of hypodermic injections of tuberculin, a product of themselves. Although after a careful trial it has not proved successful, still it has been fully demonstrated to have a decided effect on the bacilli or their toxins, as it has become a valuable aid to diagnosing tuberculosis in cattle, as after the hypodermic injection of tuberculin an elevation of temperature is soon noticeable in animals affected, and those in health are entirely free from any change whatever. Others in the study of biological therapy have been able to produce substances in the form of anti-toxin serum, which, by hypodermic injections, have had a decided effect in the cure of diphtheria and septicemia. It is not vain to be hopeful, so that we may yet expect that in time internal antiseptics by bacterial products may become a valuable aid to medicine.

In this paper it is not my intention to discuss the use of bacterial products in the cure of tetanus, but to draw your attention to the treatment of germicidal diseases by the use of chemical antiseptics given internally—such chemical substances as will destroy pathogenic bacteria, or prevent the development of toxin or septic products of micro-organism without injuring the organs or tissues of the body. Then the first question which would present itself to us would be, Have we any germicide or antiseptic remedy which might be administered by the stomach or hypodermically that would have the desired effect of destroying the bacilli of the different germ diseases without injuring the organism?

Externally we know that the germicidal properties of chemical compounds produce this effect by coming in contact with the living germs. Many believe that it would be necessary for any remedy, either external or internal, to be a germicide

would require to come directly in contact with the micro-organism to be effectual. Taking such to be the case, I believe you will all agree with me that we have no such a substance at present in our materia medica, for the quantity that would be required to saturate the system so as to kill the germ in the circulatory fluids would produce toxic effects fatal to the organism, fatal to the patient, as all those substances which we are familiar with which are most efficacious in destroying germ life are those which interfere most readily with tissue cells.

The second question which would then present itself would be in strictly constitutional diseases of bacterial origin: Of what value therefore, is any internal chemical antiseptic? which might be answered by saying, only of a mitigating and not of a certain value. But to this answer I take exception, as I fully believe in the curative properties of chemical compounds as antiseptics, taken internally. Bacteriologists have been able to demonstrate that bacilli in bacterial culture produce a toxin destructive to themselves, poisonous to the very germs that produce them.

Then we have a similar illustration in the self-limitation of infectious diseases, especially exanthemata, where the recovery usually occurs spontaneously and within a certain period, which must lead us to believe that, as in the case of bacilli culture, is due to some organic antiseptic which checks the increase of germs circulating in the system. Then, if organic substance has the power of destroying germ life in the circulation, either directly or through the destruction in the organism of the substances necessary to the life of the parasite, why should there not be some inorganic product which would have similar results? I believe it can be fully demonstrated that there is—not having the power to produce an immunity from disease, but in destroying the bacilli or their toxins in specific constitutional troubles due to germs.

For an example, I might mention the use of creasote in tubercular troubles, which in all cases prolong life, and in many cases when used early in the disease, makes permanent cures. Then again there is mercury, one of the best external antiseptics we have got. When taken internally it is almost a specific in the cure of syphilis, a germ disease, and it matters not how it enters the circulation either by inoculation, inhalation, subcutaneous injections, or by absorption through the stomach, it has the power of destroying the syphilitic bacilli, and I have seen excellent results in the free use of mercury in diphtheric and membranous croup.

Then a third chemical substance I might draw your attention to is sul. quinine as a germicide, and if there is any remedy in the materia medica which can be classed as a specific in the cure of disease, it is the sul. quinine in the cure of malarial fevers. It is a remedy that has been long in use, but until bacteriologists dis-

covered the malarial plasmodia or germ, it was not known by what means it produced the desired effect, and in malarial fever the malarial plasmodia or parasite has been found in the circulating fluids; so that quinine not only destroys the effect of the toxin of malarial bacilli but the germs themselves.

I also believe that quinine has a similar effect on the germs or bacilli of pneumonia, as I am certain I have aborted many a case of pneumonia by giving large doses of quinine in the early stage.

Having pointed out several chemical compounds which are destructive to certain forms of germ life, given internally in the way of an internal antiseptic, why are there not other chemical compounds which will have the desired effect on other forms of germ diseases? In the case which I purpose making a short report on, viz., the case of my driving horse, I chose phenic acid, it being one of the best external germicides we have, being readily diluted and quickly absorbed, as there are few remedies taken in poisonous doses which produce death quicker than carbolic acid. The toxic effect of phenic acid taken internally is described in the dispensary as producing nausea, cold sweats, marked pallor of the skin, stupor, rapidly deepening into complete coma or insensibility. Carbolic acid is easily diluted and readily diffused through the system, which is shown by its rapid toxic effect in poisonous doses, also when given in medicinal doses. In a few hours the odor is noticeable on the breath, and it produces a complete change in the color of the urine, showing that it is quickly absorbed by the stomach and passes through the circulating fluids.

Tetanus is caused by a pathogenic microbe implanting itself in the living organism, and whether it is at the seat of inoculation or in the circulation that the detritus secretions and toxic products are produced, it is certain they are of high physiological action, and very detrimental to human or animal life. The tetanic bacilli, or its toxin, while passing through the circulation, principally attacks the nerve centres, following the nerve fibres and causing erithism, which in many cases becomes continuous.

Then the first object of treatment is to counteract the tetanic poison and neutralize the toxin in the system; secondly, to immunize the system, rendering the soil unsuitable for the growth and propagation of further crops of the tetanic bacilli; thirdly, to diminish the erithism of the nerve centres. For to meet the first and second indications, I believe there is no remedy of a chemical compound which complies with these requirements better than carbolic acid, it being easily diluted, quickly absorbed and carried through the circulation, and at the same time an active germicide; and for to relieve the erithism, bromide potassium and belladonna, or bromide potassium and hydra chloral.

REPORT OF A CASE OF TETANUS.

From an injury to the fore-foot of my horse, caused by a nail penetrating the sensitive laminae, inflammation set up, terminating in the formation of pus, which burrowed its way up, and formed an opening on the coronet, where the pus escaped. A few days after I noticed that pus was escaping; she was seized with tetanus on the 7th of November. The following day she was much worse, and on the morning of the 9th her muscles were so contracted that it was difficult for her to move. I then called in a veterinary surgeon, who at once pronounced it a case of traumatic tetanus of a severe type. Symptoms: Closure of the jaws, difficulty in swallowing, rigidity of the limbs, nose poked out, eyes contracted, the haw extending down over them; labored breathing, respiration rapid, sometimes as often as fifty times to the minute; contraction of all the voluntary muscles, which became more persistent as the disease advanced, the spasms becoming continuous without any relaxation. These symptoms continued to increase up to the 13th, six days after the first symptoms were noticed. At this time it was impossible for her to move; her legs were stretched out wide apart; she looked more like that she was standing on wooden stilts than on living structures. In this condition she remained for five or six days without any noticeable change; then the muscles began to relax, and from this time she made a rapid recovery.

Treatment: First noticed symptoms of tetanus on the 7th, but no medicine was given until the evening of the 9th, after the veterinary surgeon had seen her; gave her then two drachms of bromide potassium and two drachms tincture of belladonna. Next morning gave her three drachms of bromide potassium and three drachms of tincture belladonna; at noon increased the dose to four drachms of each. Still the symptoms seemed to be increasing. In the evening decided to give her an internal antiseptic, as well, and chose carbolic acid, it being one of our best external germicides. So on the evening of the 10th, three days after the malady had shown itself, gave her by hypodermic injection 20 grains of carbolic acid, diluted to about six per cent. solution, and in six hours repeated the dose. The next morning gave her by the stomach half drachm carbolic acid, four drachms bromide potassium and one drachm Fl. ext. belladonna. Continued this dose every six hours until she had taken eight doses, or, in other words, for two days. Then increased the carbolic acid to 40 grains at a dose, continuing the bromide and belladonna so that she was now taking $2\frac{2}{3}$ drachms of carbolic acid, two ounces bromide potassium and four drachms of F. ext. belladonna every twenty-four hours. Continued this treatment for twelve days longer, and by

this time the muscular spasms had almost entirely left her. I then discontinued the bromides and belladonna, and gave her for the next ten days half-drachm doses of carbolic acid, with a drachm of iodide potassium, three times a day. From commencement I bathed the foot twice a day with a ten per cent. solution of carbolic acid, and twice during her illness I gave her half a pound sul. magnesia. For the first two days after commencing the carbolic acid the symptoms continued to grow worse, and for the next six days there was but little change, if any, that I could notice. After that she began to improve, and improved rapidly. As soon as she could open her jaws she seemed to have a ravenous appetite. In less than six weeks from the time the malady first showed itself I began driving her, and have continued to do so ever since, she feeling well and having good spirits.

Reports of Societies

SIMCOE MEDICAL ASSOCIATION.

The County of Simcoe Medical Association met in the Council Chamber, Barrie, February 10th, 1899, the President, Dr. McCullough, in the chair.

Members present, Drs. Williams, Bracebridge; Heaslip, Hillsdale; Clutton, Edgar; Mackie, Cookstown; Evans, Stroud; McCarthy, W. A. Ross, Smith, Palling, Raikes, Morton, Wallwin and Wells, Barrie; and Dr. Hunt, New Lowell. Minutes of last meeting were read and adopted.

Dr. George A. Peters, F.R.C.S., Toronto, presented an exhaustive and interesting paper on "Surgical Treatment of Diseases of the Pleura," dealing more especially with Empyema. The different germs found in the effusions, such as the pneumococcus and streptococcus were described and comparative mortality of infection by either given, as well as percentage infection in children and adults. Modes of operation were described as:

1. Aspiration.
2. Syphon drainage.
3. Free incisions, with or without partial excision of ribs.

These different modes of operation were described, Dr. Peters expressing himself as being favorable in most cases, where pus was present, to operate by free incision and drainage, a preliminary puncture with hypodermic needle or aspirator being wise before operation.

Incision should be made in mid-axillary line, fairly low down, about neighborhood of ninth rib when possible to make it so low.

As to the advisability of excising a portion of rib, the author quoted opinions of the recognized surgeons of the day. If a considerable interval exists between ribs at field of operation, not necessary in most cases to excise portion of rib, otherwise a portion of rib or ribs must be excised.

The author did not favor flushing out of cavity after operation unless decomposition of discharge existed, as fatal collapse may follow act of flushing out of pleural cavity. An irrigating tube illustrating method of flushing pleural cavity was exhibited. It consisted of two rubber tubes fastened side by side, one perforated, the other unperforated and about an inch longer than the other. The fountain syringe tube is attached to the unperforated tube, thus ensuring the fluid reaching the bottom of the pus cavity, before being possible for it to return.

The major operations for deformity, as Estlander's and others, were described, on a specimen card of over twenty inches, of ribs removed by an Estlander's operation (shown by favor of Dr. Primrose).

A system of pulmonary gymnastics to secure expansion of lung was described—one form consisting of patient blowing water from one bottle to another through rubber tubes for a certain time at intervals.

Conclusions.—Cause of empyema—bacteria. The pneumococcus germ is the most benign and the streptococcus the most fatal.

Treatment.—(1) By aspiration. (2) By syphon drainage. (3) By free incision.

Discussion followed by Dr. W. A. Ross and Dr. McCarthy, Barrie; Dr. Williams, Bracebridge; Dr. Morton, Barrie; and Dr. Heaslip, Hillsdale. Dr. Peters replied. The paper was well received and appreciated by the Association.

Dr. J. H. Elliott, Gravenhurst Sanatorium, was expected to present a paper on "Pulmonary Tuberculosis," but, being absent through illness, sent his paper to the secretary.

Dr. Harper, of Alliston, and Dr. Williams, of Bracebridge, discussed the subject with special reference to treatment. The following officers were elected: President, Dr. Williams, Bracebridge; 1st Vice-President, Dr. McFaul, Stayner; 2nd Vice-President, Dr. Gilchrist, Orillia; 3rd Vice-President, Dr. Heaslip, Hillsdale; Sec.-Treas., Dr. Evans, Stroud.

Moved by Dr. Wells, seconded by Dr. W. A. Ross, "That in connection with the damages recently imposed upon Drs. Anderson, Garrett and Harris for performing a post-mortem under sanction of a coroner, resolved that our representative, Dr. Hanly, be instructed to bring the matter to the attention of the Medical Council, advising an appeal or other action by that body." Carried.

Meeting adjourned to call of the president.

Special Selections

SANITARY ARRANGEMENTS FOR COUNTRY HOUSES.

BY HARVEY B. BASHORE, M.D., WEST FAIRVIEW, PA.

In the average country or village house very little attention is paid to sanitary requirements. The "moss-covered bucket" and

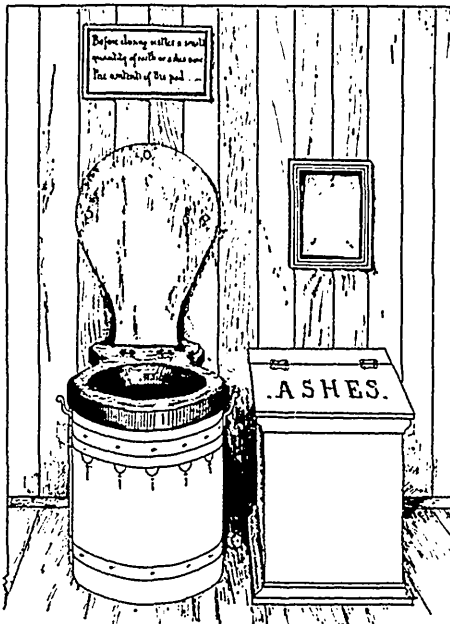


FIG. 1.—A Modern Dry Closet.

the old-fashioned privy still reign supreme. To condemn the village pump is to place one's self beyond the pale of a reasonable being, yet almost every town pump yields a water grossly polluted.

To put such places on a sanitary basis we need a complete charge of existing conditions, and the old privy is probably the place to begin. This should, without any exception whatsoever, be abolished and a dry closet substituted. This may readily be done by closing the floor underneath the seat and putting up a closet such as is shown in Fig. 1. This consists simply of a seat,

a galvanized-iron pail, and a box to hold the ashes or dry earth. The one figured in the plate is rather elaborate, yet it can be made almost anywhere for three or four dollars. When the pail is filled it should be emptied directly on to the garden bed and a little earth raked over it. In two or three weeks, depending on the season, all the filth will be destroyed by the nitrifying bacteria and nothing left but a dark, rich humus. A dry closet such as this may be used in any vacant room in the house, for it is cleanly and odorless. In the absence of water service and sewers, a dry closet is the only proper thing to use.

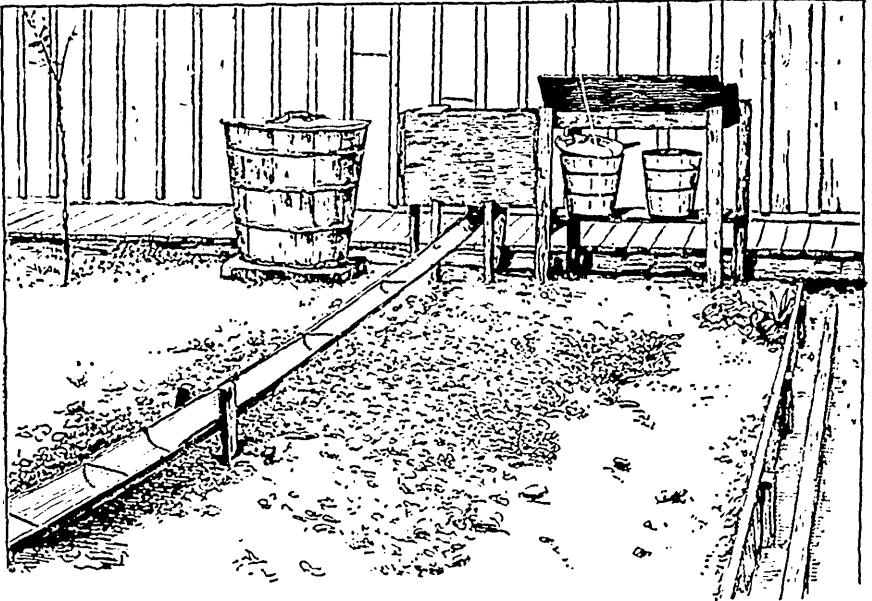


FIG. 2.—Drain Made from a Tin Roof-Gutter.

The drinking water offers another problem for solution. Well water, the kind almost always used in rural districts, very rarely approaches purity; that it does not contain disease germs is simply because the germs have not come in its way. Sooner or later, and generally sooner, all wells become foci of disease. The safest water for rural dwellers to drink is cistern water, and if it is collected from a roof kept moderately clean, it will be clear and palatable. I know of a small town in Pennsylvania where cistern water is almost exclusively used, and, as a result, typhoid fever—the great water-borne disease—is practically unknown.

Now another point deserving our attention in country homes is the disposal of waste water from the kitchen, bedrooms, baths,

etc. The most general method in vogue is simply to throw it into the street or the backyard—an unsightly and unsanitary procedure.

In the small towns where there is no water service, there are no kitchen sinks or sewers, and the best way is to collect the waste water in buckets and run it through perforated drains, suspended over a cultivated garden-bed.

To do this we need a galvanized-iron box or bowl placed at the corner of the bed, as a receiver for the water; from this an old roof-gutter extends in any direction available; all this is apparent

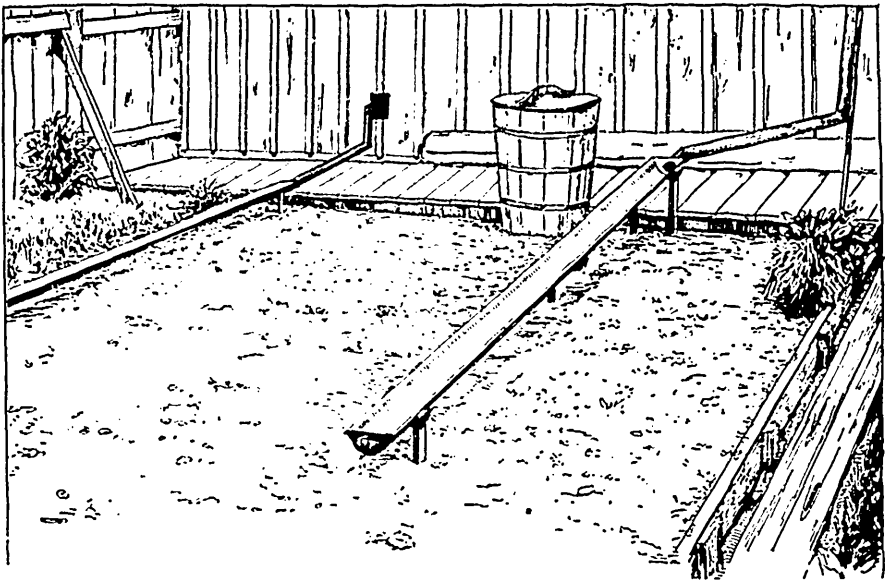


FIG. 3.—Showing Drains connected with Kitchen Sink and Bath.

by reference to Fig. 2. The gutter is perforated by three-sixteenth-inch holes at intervals of a foot or so. For a family of four or five the drain should be about twenty feet long and have a fall of about one inch in four feet.

Fig. 3 shows a more elaborate drain made for a house having a kitchen sink and bathroom. Of course the bed over which these drains are suspended must be cultivated and kept loose and porous by raking. There is another part of household refuse, namely, solid kitchen waste (known technically as garbage), which is composed of scraps of meat, potato parings, melon rinds, etc. What becomes of this will be apparent to anyone who will take the trouble to wander through the back streets of any of our small towns.

The best method of garbage disposal—that is, in small towns—is to dig a hole two or three feet deep on the garden bed, and throw the offal into this; every day or two a little earth may be thrown over the top of the refuse, and when one hole is filled another is dug, and so on around the bed.

The bacteria of nitrification works continually on such material, and when the time comes around for cultivating the bed, all the decomposable material will have been changed into humus.

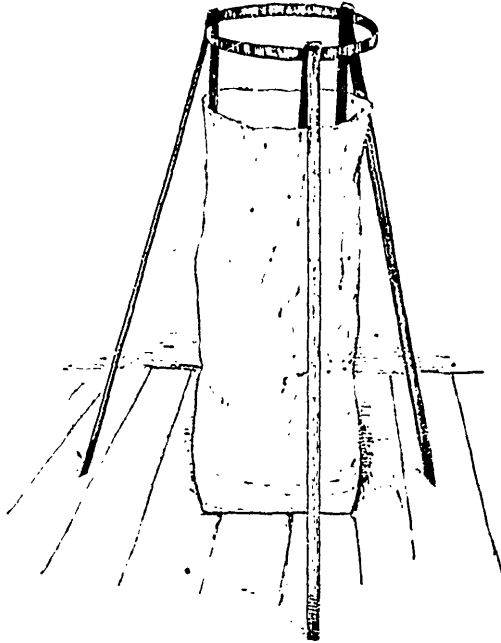


FIG. 4.—Showing Support for Flour-sack, when used to hold Rubbish or Ashes.

There is in all households another kind of waste known as rubbish—paper, rags, old shoes, bottles, tin cans, broken crockery, scraps of metal, etc. This material should be divided into at least two groups—a combustible and a non-combustible—and for doing this nothing answers so well as flour-sacks, supported by iron frames, as shown in Fig. 4. The combustible part may be disposed of by fire, or, what is better, sold to the junkman, who is known in the rural districts as the “ragman.” The non-combustible part may be dumped into some gully which needs filling.

Ashes should be collected in a sack or barrel, and used for making paths, which are so much needed in all villages.—*Medical Record.*

SOME POINTS IN THE BACTERIOLOGY OF PUBLIC WATER SUPPLIES.

At a meeting of the Sheffield Microscopical Society, Dr. Robertson, medical officer of health for the city of Sheffield, delivered a very interesting lecture on "Some Points in the Bacteriology of Public Water Supplies." The lecturer said within recent years bacteriological methods had been applied in the examination of public water supplies with very varying degrees of success. Insufficient methods had been applied, and deductions had been drawn from bacteriological data which were entirely unwarranted, and as a result bacteriology, as applied to our public supplies was somewhat discounted. The examination of public water supplies by a competent bacteriologist was, however, of the greatest possible utility in many ways, and, indeed, was a much more delicate indication of contamination than any of the chemical methods employed. He must not be understood to detract from the value of chemical methods in any way. He believed that bacteriological examinations revealed slight pollutions much more readily than did chemical methods, and although he did not think the former would ever supplant the latter, they were of immense value as an adjunct. There were two conflicting interests which the chemist and the bacteriologist had to deal with when they had to report on any public water supply. They had to guard the consumer against any possible danger which might arise from the use of the particular water, and they must not condemn without real cause any water supply, otherwise unnecessary trouble and expense was thrown on the general body of ratepayers. Having divided public water supplies into three classes—those derived from gathering grounds, those from deep wells and springs, and those from rivers—he said there was no such thing as a public supply which was quite free from any bacteria. Rain-water, as it fell through the air, picked up a certain number of organisms, even before it touched the ground. That number was increased enormously as the rain arrived at the surface of the soil and passed over it. To some extent the organisms were filtered out as they passed downwards through the soil, but even water taken many feet below the surface still contained a good many organisms of various kinds. He had had opportunities of examining water from many deep wells, and he had never found one which was perfectly sterile. He had found a shallow well in Sheffield which was perfectly sterile, but that was under very unusual conditions. It might be taken that all deep well waters contained a few organisms. They were very few indeed, and he believed that they were due mainly to

percolation down the sides of the well and not to organisms having been carried through enormous depths of soil into the well.

A great many eminent bacteriologists had tried to fix standards of purity from the number of organisms present in the water. He believed that the first standard was made by two Englishmen, Angus Smith and Dr. Frankland. It was not published at the time, and later the same standard was made by Professor Koch, and had been very widely known and recognized. He was not aware that it was a good standard, but one ought to know it. Professor Koch laid it down that water which had been filtered through sand should not contain more than 100 organisms in a cubic centimetre (which was equal to about 18 drops). Miguel gave the following scale: Excessively pure water, 0 to 10 per cubic centimetre; very pure, 10 to 100; pure, 100 to 1,000; passable, 1,000 to 10,000; impure, 10,000 to 100,000; very impure, over 100,000. Many observers had argued that a good water should only contain a very few varieties of organisms. He did not think this could be relied upon. He did not see why, because a water contained twenty varieties of organisms, instead of two or three, that water should in any way be condemned. Importance had also been attached to the fact of a water containing a large number of liquefying organisms; but he had seen some Sheffield waters which contained a large number of these, and yet they were derived from the moors and were perfectly innocuous. There was no concensus of opinion with regard to the interpretation of results. Most bacteriologists would agree that a water for a public supply containing over 1,000 organisms per cubic centimetre was not good, but further than that, there was no unanimity of opinion. To Professor Delépin, of Owens College, Manchester, was due the credit of throwing considerable additional light on the results of the examination of waters of moderate and great purity. He (the lecturer) had had a good deal of experience in verifying the professor's methods, and he thought they were the only reliable ones to be applied to public water supplies. They gave results which appeared to him to be entirely free from ambiguity when applied to the investigation of a surface or sub-soil water. No general standard of purity could be relied upon, but where they had a supply from gathering grounds, as was the case in Sheffield, they could go to the moors and find feeders which were absolutely uncontaminated. The number of organisms in all soil, however—moorland as well as manured soil, was enormous, every ounce of soil containing many millions of them, and the liability during heavy rains of organisms getting washed into the feeders was very great indeed. In the practical application of the methods these variations were unimportant, but it was useful to have a standard for wet weather as well as for dry weather. It might be supposed that the cold

weather of winter would kill the organisms, but as a matter of fact they were not like some of the disease-producing organisms, and lived perfectly well at a low temperature. Having determined upon a standard for a certain gathering ground, it was remarkable how good a guide this was to contamination at other points of the same ground, soakage from a farm or other organic contamination could easily be detected. By following up a stream a point would be found where the water was pure, and on comparing the results of a bacteriological examination of such a sample with that of a sample polluted, the difference was at once very marked. It was possible to add a few millions of typhoid organisms to a gallon of perfectly pure distilled water, and then to have that water examined by chemical methods and declared to be perfectly pure. Such a condition did not often happen in nature, but it was the fact. A bacteriological examination of such a water would show it to be teeming with organisms. In the same way many slight pollutions in a large gathering ground could only be detected by such a comparative method as he had described.

Having obtained one's standard it was only necessary to examine the feeders as they entered the reservoir. If the number and species of organisms were found to be markedly greater than in uncontaminated feeders this would, of course, indicate that the source of contamination should be sought for and removed. Again, if this method were adopted, a weekly examination of a water supply would give the most sensitive results, should any slight pollution take place. As showing the increase in the number of organisms in the rainy period, Dr. Robertson said that the Thames water sometimes contained as many as 160,000 in eighteen drops. Generally taking one month with another, there was an average of 20,000 or 30,000, but during the five years ended 1897, the average for one company was 50,560, a condition in which the water could never be supplied to the general public without, in all probability, something happening. Dr. Robertson went on to explain the methods of collecting water for examination. Small tubes drawn out to a point were used; these could be hermetically sealed and kept pure. When they were dipped in the water the point was broken off with a pair of sterile forceps, and on being withdrawn they were again sealed. If the examination was not to be made immediately they must be placed in a cold storage, as at a temperature just above freezing point, the organisms did not multiply. For examination, the water should be mixed in glass dishes with beef jelly, which is a good nourishing medium, and when the colonies of organisms are visible to the naked eye, the dishes might be placed against a black ground, such as black glass, and the organisms counted with the aid of a hand lens, the squares into which the black glass was divided assisting the counting.

More difficult than the counting of the number was the task of finding out whether there were any disease organisms present. They had at present to use very imperfect methods indeed, and a lot that had been done and said on the subject was absolutely not true. One often read of analyses of water where bacteriologists had certified that the samples submitted to them contained no typhoid organisms; but when they were dealing with millions of organisms it was a matter of extreme difficulty to find one that would produce disease. In looking for typhoid organisms, they had to adopt a process of killing off the others by heating the water to the temperature of the human body. He recommended the study of water as an element of microscopical work, which would take a very important place in the near future. The lecturer pointed out the extreme usefulness of subsidence of water (in settling ponds) and of sand filters in keeping back organisms, the average result of the sand filter being that it kept back 99 per cent. of the bacteria, and he showed how bacteriological examination would check results and prove whether a filter was doing its work or not. In conclusion, he expressed the opinion that the perils of water-borne disease had been very much over-estimated, and, referring especially to the Redmires' reservoirs at Sheffield—where the water of the top dam is decanted into a second, and then into a third, from which the town supply is drawn—said if a number of typhoid organisms were let loose in the top dam there would be very little chance indeed of their getting to the town, as, in the weeks that must elapse before the water was drawn off, other organisms would destroy them, or sedimentation would have occurred.—*Pharm. Jour.*

SUBCUTANEOUS INJECTIONS OF SOLUTIONS OF GELATIN IN ANEURISM.

BY HAROLD N. MOYER, M.D., Chicago.

Little has been suggested of late in the medical treatment of aneurism. Medical aneurisms include the thoracic and abdominal varieties; aneurisms of the extremities are termed surgical, as they can usually be reached by operation. In the former variety, almost nothing that is distinctly new has been suggested in their treatment for many years. Moore's operation, first recommended in 1864, has given anything but brilliant results, though it has been modified in various ways. Some of the later cases, in which the coiled wire is connected with a galvanic battery, have given

better results ; the earlier cases were perhaps less favorable because of failures in asepsis.

In 1896, Dastre and Floresco¹ published their experiments on the effect of solutions of gelatin upon blood. They determined that the coagulating power of blood was increased by the addition of gelatin. This action was constant whether the solution was brought in contact with blood in an open vessel or injected into the blood-vessels of an animal. There was no antagonism between salt solutions and gelatin, the latter having no power to determine coagulation in their presence. There was an antagonism between peptone and similar substances and gelatin. Gelatin and peptone, in the proportion of one to three, neutralize each other.

A year later Camus and Gley² studied the same subject and came to the same conclusions, namely, that solutions of gelatin did increase the coagulability of the blood. They did not regard this as due to a specific action on the part of the gelatin, but to its acid reaction. The antagonism between propeptone and gelatin they attributed to the fact that the former is acid and the latter alkaline. Floresco,³ in a later communication, maintained that gelatin had a specific action, predicating his view on the fact that injections of gelatin caused an increase in blood pressure, while acid injections were followed by a fall.

In June, 1897, Lanceraux and Paulesco⁴ discussed the treatment of aneurisms before the French Academy of Medicine. Their first patient was a man 50 years old, who had had malaria nine years before. He had aortitis *en plaques* and an aneurism of the arch of the aorta of three years' duration. Syphilis and arterial sclerosis were excluded. For six months he had suffered from right intercostal neuralgia, and for a year a pulsating tumor had been noted to the right of the sternum. The second, third and fourth costal cartilages were partly absorbed, and part of the sternum. There was no difference in the radial pulses. The patient could only lie on the right side. Every change of position was accompanied by coughing, hoarseness and oppression. Of late there had been a rapid increase in the size of the aneurism.

January 20, 1897, the patient was given an injection of 250 cubic centimetres of a five per cent. solution of gelatin. The following day the tumor was harder, and decreased in size for the next few days. Later it became soft and increased in volume.

February 10, a second injection of 150 cubic centimetres of a one per cent. solution was given, which was followed by a shrinking of the tumor and a disappearance of the pain and chest symptoms. From this date until May 2 the patient received twelve injections. The tumor became much smaller and the pulsation ceased. The patient resumed his occupation. At the end of a year intercostal neuralgia returned, and the lower portions of the

tumor became soft and pulsated. A single injection was sufficient to overcome these symptoms. The reporters state that the original tumor remained throughout hard and pulseless, but that these relapses were due to new enlargements of the vessel.

A second case was that of a man 48 years old, whose trouble began with a crackling in the chest and slight hemoptysis, followed by pain and oppression in the chest. The veins of the upper thorax were enlarged; there was distinct pulsation in the second right intercostal space, over which a systolic murmur was heard. Both carotid and radial pulses were alike. From May 20 to August 1 he received ten injections of 200 cubic centimetres of a two per cent. solution of gelatin. The pulsation, murmur and oppression disappeared. After two additional injections he was discharged cured.

A third case was a coachman 50 years old, whose trouble began with a feeling of numbness in the right arm, followed by pain and a loss of power. Outside of the scalenus muscle, under the right clavicle, a small, distinctly pulsating tumor was found. The right radial and axillary pulses were absent. From January 18, 1898, to April 9, 1898, he was given eleven injections of 200 cubic centimetres of two per cent. gelatin solution. The first injection was followed by a hardening of the tumor; after the third, a murmur was heard over the aneurism which was not present before treatment was begun. In April the patient began to move about and the tumor increased in size, became soft, and pulsated. Two additional injections caused the pulsations to disappear, and the tumor again became hard. From May 1 to June 20 nine injections were given. July 5, a weak radial pulse was noticed for the first time; it disappeared, but returned after two additional injections. August 13, the patient left the hospital to resume his occupation.

Two cases with diffuse dilatation of the aorta were treated; one was given nine injections and the other two, but there was no improvement.

Lanceraux states that the formation of a distinct sac in which a coagulum can form is an essential condition in the success of the treatment. In such sacs there is a slowing of the circulation and a deposit of fibrin. This deposit at first fills the cavity; later it contracts, and the blood again finds its way between the coagulum and the vessel wall.

Boinct reports a case of aneurism of the ascending aorta. The case was treated by the usual methods, without result. After gelatin injections, coagula developed in the deepest portions of the aneurism. Lung tuberculosis developed, and the patient died with well marked symptoms of compression of the ascending vena cava.

Barth reported the case of a woman, 45 years of age, with an

aneurism of the beginning of the arch, who received an injection three times a week, the strength being increased from one to two per cent. After the fifth injection the tumor was harder, the pulsations lessened, and the subjective conditions improved. The sixteenth injection was followed by severe pain at the place of injection, a temperature of 104° F., and the development of a large abscess. Two months after beginning treatment dyspnea set in and the patient died; during her last hours there were marked symptoms of anemia of the brain. The necropsy showed an aneurism the size of a child's head, at the beginning of the aorta. The sac was filled with clots easily separated from the wall; the innominate, with its branches, contained clots, those in the innominate being old and firm—that in the carotid was recent and soft.

Huchard⁸ has used the injections in two cases: one with improvement and a disappearance of the tumor; in the other the injections were very painful.

The solutions employed by Lanceraux are made by dissolving four to five grammes of gelatin in 200 cubic centimetres of a seven per cent. chloride of sodium solution, previously sterilized. The solutions are kept for several days at a temperature of 100° F. Those which become cloudy are rejected, as well as those which do not harden when cold.

Fletcher⁹ reported to the Johns Hopkins Hospital Medical Society four cases treated by this method. One case received six injections, two of two per cent., and four of one per cent.; the stronger solution was found to give considerable pain. The patient was apparently doing well, when a severe hemorrhage set in, ending in death. The autopsy showed a diffuse dilatation of the aorta, associated with a saccular dilatation.

A second case had an aneurism of the thoracic aorta, with definite pulsation, murmurs, and intense pain in the lower part of the thorax. Twenty-eight injections were given. Pain and pulsations decreased, and there was a gain of nineteen pounds in weight. This was considered the most satisfactory of the four cases.

A third case was one of saccular abdominal aneurism, which received sixteen injections with no improvement.

A fourth case was one of diffuse dilatation of the arch, in which twenty-one injections were given. The outcome in the case is not stated. A marked increase in the coagulability of the blood was determined in this and in the second case.

The report of Lanceraux gave rise to an animated discussion before the French Academy, chiefly devoted to the irreconcilable differences in the therapeutic observations and experimental data. Bearing upon this are the observations of Welch, in discussing Fletcher's report. He stated that the coagula in aneurism are not the same as ordinary clots forming outside the body, but are

thrombi which consist largely of platelets. It is difficult to bring the formation of thrombi into relation with the coagulability of the blood. In rheumatism there is a quick coagulation time with little or no tendency to the formation of thrombi, while in typhoid there is this tendency associated with short coagulation time.

A review of the recent literature justifies the following conclusions :

1. Gelatin solutions are of some value in the treatment of saccular aneurisms.
2. They are of no value in diffuse enlargements of a vessel.
3. The remedy is used empirically, the experimental work affording little or no basis for the treatment.
4. Solutions not stronger than one per cent. should be used.
5. Great care should be exercised in technique ; failures in aseptis are easily made, as the solution is a good culture medium. The solutions should be kept in a brood oven to determine bacterial growth.
6. There may be dangers in the treatment, but the observations heretofore made are insufficient to indicate what they are.
7. Absolute rest in bed should be enjoined, and other remedies suitable for these cases may be given at the same time.
8. It is not a cure for aneurism, but may rank in the future as a treatment.
9. The method is worthy of more extended trial.

BIBLIOGRAPHY.

1. Dastre et Floresco : "Action coagulante des injections de gélatine sur la sang," *Arch. de Physiol.*, 1896.
2. Camus et Gley : "Action du sérum sanguin et des solutions de propeptone sur quelques ferments digestives," *Arch. de Physiol.*, 1897.
3. Floresco : "Action des aïdes et de la gélatine sur la coagulation du sang," *Arch. de Physiol.*, 1897.
4. Lanceriaux et Paulesco : "Du traitement des anévrysmes en général et de l'anévrysmes de l'aorta en particulier par des injections sous-cutané d'une solution gélatineuse," *Bull. de l'Académie de Médecine de Paris*, 1897.
5. — "Nouvelle méthode du traitement des anévrysmes," *Journal de Médecine Int.*, October, 1898.
6. — "Traitement des anévrysmes par la gélatine en injections sous-cutanées," *Bull. de l'Académie de Médecine de Paris*, 1898.
7. Boinet : "Traitement des anévrysmes par la gélatine en injections sous-cutanées," *Revue de Médecine*, 1898.
8. Huchard : "Traitement des anévrysmes par les injections gélatineuses," *Bull. de l'Académie de Médecine de Paris*, 1898.
9. Report of the Johns Hopkins Medical Society, *Maryland Med. Journal*, Jan. 21, 1899.—*Medicine*.

THE USE OF STREPTOCOCCUS SERUM, WITH SOME REPORTS OF CASES.*

Dr. William H. Park presented in this paper some of his personal experience with this serum in an experimental way. The plan followed had been to inject simultaneously a high-grade serum and the culture into rabbits, using from one hundred to one thousand times the fatal dose. Every one of these rabbits had lived. Three control rabbits had been given one-tenth of the dose of streptococcus, but no serum, and all three had died in periods varying from twenty-four hours to four days. This was absolute proof that in this particular instance the animals were saved from the results of streptococcus poisoning by injecting the anti-streptococcus serum. Dr. Anna W. Williams had tested the serum against three different varieties of streptococci showing enormous differences in virulence, and derived from different forms of infection. One streptococcus came from France, one from England, and one from America. All of the animals so inoculated had been equally well protected.

Streptococcus Serum.—The serum was usually prepared by injecting a horse with very virulent cultures of the streptococcus, but the speaker was not at all sure that it was necessary to use such virulent cultures. These so-called virulent cultures, it should be noted, were virulent to rabbits, but it did not follow that these same cultures were especially virulent to horses.

Its Stability and Potency.—Usually after three or four weeks the streptococcus serum would lose its bactericidal properties, and hence no serum should be used that had not been freshly prepared or freshly tested. The value of the serum was determined by the amount required to protect against a multiple of a fatal dose—usually one thousand times the average fatal dose. It should be remembered that it was only by the enormous reproduction of the streptococci introduced into the animal that the latter was killed; it was not by the streptococci which were injected.

Therapeutic Value.—Experiment had shown that until the streptococci had begun to appear in the blood it was possible to protect the animal by the injection of the serum; after this it appeared to be futile to attempt to confer such immunity. In a case of gangrenous appendicitis and localized peritonitis at the J. Hood Wright Memorial Hospital erysipelas had developed on the right arm two days after the operation. Two days later the

*Paper presented by Dr. Wm. H. Park, before the New York Academy of Medicine, March 13th, 1899.

patient was doing fairly well, but after three days more the erysipelas had begun to spread. Then 10 c.c. of the streptococcus serum had been given, and the next day 10 c.c. more, after which the erysipelas had subsided, and three days later had almost ceased. After an interval of two days, or on April 29th, the erysipelas had again begun to spread rapidly. On May 6th, the erysipelas being quite extensive, 12 c.c. of the serum had been administered, 12 c.c. on the next day, and 20 c.c. more on the third day. Again the erysipelas had ceased. For the next three days 20 c.c. had been given daily. After this there had been no return of the erysipelas. Altogether 175 c.c. had been given in this case. On the other hand, in another case, one of puerperal sepsis, which had been admitted to hospital with a temperature of 105° F., and the patient in very bad condition, there was streptococcus infection and probably other infection. The serum had been given for two days, in this case in doses of 20 c.c., without any effect on the temperature, and the patient had then died. Another patient had entered hospital on the fifth day in a state of profound septicemia and beginning pyemia, yet the pulse and temperature had remained below 100 and 101° F., respectively. The case was one of mixed infection with the streptococcus and staphylococcus. Unfortunately, in only about fifteen cases, Dr. Park said, had he been able to get cultures from the cases on which the streptococcus serum had been tried. In two-thirds of all the cases in which the streptococcus serum had been given no definite effect had been observed; in one-third the surgeons thought the serum had acted beneficially.

Kind of Infection.—The speaker said that pure streptococcus infections were not so frequent as many surgeons seemed to suppose. Nearly all the severe infections spreading in the limbs had been found to be examples of infection with streptococcus or staphylococcus. Of ten cases of infection of the uterus, reported to him by a friend, only two had pure streptococcus infection, and in only three others did the streptococcus predominate. Most cases of infection of the uterus were probably mixed infections, most commonly with the colon bacillus or staphylococcus. In the human subject, it should be remembered that the infection was almost always a very extensive one, which was in marked contrast with the conditions which obtained in laboratory experiments on rabbits. He thought in suitable cases one was warranted in trying the serum, but should not expect very striking results. The Board of Health would gladly make all the necessary cultures if members of the medical profession would send the material to the laboratory. Dr. Weir said that he had tried the serum of Marmorek and also that from the Pasteur Institute of Chicago, in about twenty cases, but with indifferent results. Sub-

sequent investigation had apparently shown that the serum he had used had been unreliable. For this reason it was important to secure streptococcus serum only from health-board laboratories, and not to trust the uncertain productions found in the shops. Watson Cheyne had told him that, in cases in which there was great reason to expect wound infection, it was his custom not to wait for such infection, but to inject the streptococcus serum at once, and he thought his results justified this practice. Dr. C. N. Dowd remarked that the surgeon did not usually think of resorting to the use of streptococcus serum until the case had advanced so far that he would not delay for a culture to be made before beginning the administration of the serum. Dr. Brewer asked Dr. Park if the introduction of the serum had had any effect on the local infection. Dr. Park replied that in animals there had been no evidence of local infection after the injection of the streptococcus culture. This site of the injection did not seem to have much influence upon the result, except that when the serum was injected near the infected wound it exerted a little extra influence by reason of its greater concentration. Of four different vials of Marmorek's serum which he had tested—and this was about the best for sale in the open market—he had found only one of much value. It had been found that if virulent streptococci were introduced into the peritoneal cavity of a guinea-pig there would be no leucocytosis; if the serum was introduced into the peritoneal cavity or into the circulation, there was a leucocytosis, and the cells took up the streptococcus just as they would take up a non-virulent streptococcus.—*Medical Record.*

THE CEREBRO-SPINAL FLUID IN THE HUMAN SUBJECT.

The old physicians called a cold *purgamentum cerebri*, as they fancied that the discharge from the inflamed Schneiderian membrane came from the brain. At a later day the superior person naturally smiled at this simple theory, and pitied the ignorance of anatomy and pathology which it displayed. We are gradually finding out, however, that our predecessors were not by any means such poor benighted creatures as some in their haste have said they were. Quite lately Dr. StClair Thomson has been able to prove that something of a nature of a *purgamentum cerebri* does actually occur, or, at any rate, that fluid may run away from the neighborhood of the brain through the nose. The event is of the rarest; still he shows cause for believing that it is perhaps not quite so rare as it might seem to be, examples of the occurrence having

been reported under names which hid its true nature. For some time past he has had under observation a patient suffering from a continuous dripping from the nose. The clinical details of the case are reserved for future publication; in the meantime it is sufficient to state that Dr. StClair Thomson came to the conclusion that the fluid was cerebro-spinal in origin. Regarding this as a unique opportunity of studying the chemical composition and physiological properties of the fluid, he called Professor Halliburton and Dr. Leonard Hill into council. The result is a conjoint paper entitled, "Observations on the Cerebro-spinal Fluid in the Human Subject," which was read at the last meeting of the Royal Society (on February 16th), where it excited great interest.

Since 1842, when Majendie published his *Recherches sur le Liquide Céphalo-Rachidien*, in which he placed beyond doubt the normal existence of cerebro-spinal fluid, little was added to our knowledge of this liquid until the comparatively recent work of Halliburton.* It is very probable that further study of the subject has been impeded by the difficulty of obtaining fluid from the human subject, or at least fluid that might be regarded as fairly normal. Majendie drew his conclusions from observations on animals, or on the human cadaver. Later observations have necessarily been limited to chemical researches made on the fluid obtained from cases of spina bifida or hydrocephalus, where, of course, the fluid was not secreted under anything like normal physiological conditions. Dr. StClair Thomson's case gave Professor Halliburton ample opportunities of examining the fluid in its normal state, and his researches have resulted in establishing what may fairly be looked upon as a standard composition of this fluid. It is found to be clear and colorless, like water; of low specific gravity (about 1005); containing a trace of proteid (a globulin) but no albumen; and showing no cells or other elements under the microscope. The fluid reduces Fehling's solution, but this "mysterious reducing body"—as Professor Michael Foster called it—is not sugar, for it does not ferment with yeast. Possibly it is a substance related to pyrocatechin.

The rate of the flow was next investigated, and it was found, as might be expected, that this varied considerably with different circumstances, but that it might be 20 to 30 minims in five minutes and amount to as much as half a litre a day.

Bearing in mind some researches of Cavazzani on the cerebro-spinal fluid of dogs, Professor Halliburton and Dr. StClair Thomson next compared the composition of the fluid in the morning with that secreted in the evening. The latter was found to be slightly poorer in solids, both organic and inorganic. This is what might

**Chemical Physiology and Pathology*, London, 1891.

be expected, as the decreased capillary pressure during sleep would lessen the rate of exudation of water.

Dr. Leonard Hill in his recent lectures at the College of Surgeons on the cerebral circulation, put forward the view that the rate of secretion of the cerebro-spinal fluid when the cranio-vertebral cavity is opened depends directly on the difference between the pressure of the cerebral capillaries and that of the atmosphere. At the same time it was shown that the cerebral capillary pressure varies directly and absolutely with vena cava pressure. Thus the cerebral capillary pressure can be raised with great ease by any agency which brings about a rise of pressure in the vena cava or cerebral veins. On the other hand, cerebral capillary pressure varies directly, but only proportionately, with aortic pressure, for between the aorta and capillaries there lies the peripheral resistance. From these facts it follows that the easiest methods of raising the cerebral capillary pressure in man are: (a) By compression of the abdomen; (b) by the assumption of the horizontal posture; and (c) by straining or forced expiratory effort with the glottis closed. By all these methods the vena cava pressure is considerably raised; and by the last method the venous inlets into the thorax may be completely blocked and the pressure in the cerebral capillaries raised to something like aortic pressure. Dr. StClair Thomson's patient afforded Dr. Leonard Hill an opportunity of testing the correctness of his views on the human subject, and the experiments which they carried out together resulted in an entire confirmation of those views. The flow of cerebro-spinal fluid was found to be accelerated by all the factors which raise the cerebral capillary pressure. Professor Halliburton's analysis of the fluid expelled under the varying conditions showed that the increase of flow is, moreover, accompanied by a decrease in the percentage of solid matter; the fluid passed passively contained 1.1 per cent. of total solids, while that passed during straining was found to contain 0.43 per cent.

Lastly, the effect on blood pressure of the intravascular injection of the fluid was tested. Quantities varying from 7 to 10 c.cm. were injected into the circulation in dogs, but with entirely negative results. This observation is very interesting in view of the fact that such a quantity in the case of fluid from a general paralytic has been found by Drs. Halliburton and Mott to be quite sufficient to cause a marked fall of arterial pressure. The cerebro-spinal fluid, however, removed in cases of brain atrophy contains a toxic substance, cholin, doubtless derived from the disintegration of lecithin in the brain. The normal cerebro-spinal fluid contains no trace of cholin.

This interesting communication to the Royal Society has therefore added considerably to our knowledge of the rate of flow of

cerebro-spinal fluid ; the difference of its composition at different times of the day ; the influence of straining, posture, and abdominal pressure on the flow and composition of the fluid ; and the effect of intravenous injection of the fluid in animals. It is of particular value since it is the result of observations with human cerebro-spinal fluid in apparently a normal condition, and the interest which it aroused was shown by the suggestions offered that it would be important to determine the effect on the character of the liquid produced by intellectual labor and the administration of easily eliminated drugs.

Meantime, Dr. StClair Thomson is to be congratulated on his detection of the case, and on the scientific enthusiasm which prompted him to obtain the co-operation of two such experts in their special departments as Professor Halliburton and Dr. Leonard Hill. Their joint work has resulted in establishing the chemical composition of fresh, normal, human cerebro-spinal fluid, and in elucidating several questions connected with its secretion and with the cerebral circulation.—*Brit. Med. Jour.*

OLD DISLOCATIONS OF THE ELBOW.

Dislocations nowhere become inveterate and irreducible sooner than at the elbow. This is especially true in the young, where the developmental osteogenetic power of the periosteum is in full play, and where, consequently, the slightest injury or chronic irritation of the periosteum causes new bone formation, the presence of which precludes the possibility of the joint surfaces reassuming their old relations. The soft parts, too, in growing individuals, are much more easily modified in their development by irritative factors than later in life, so that hindrance to the reduction of a dislocation soon supervenes in the course of a case from faulty evolution of the involved soft tissues. Finally, the ultimate bone relations in joints and the nice correspondence of apposing surfaces are the result of pressure and counterpressure of the parts upon each other during growth, and this being absent, deformity of the bony parts of the joints necessarily follows.

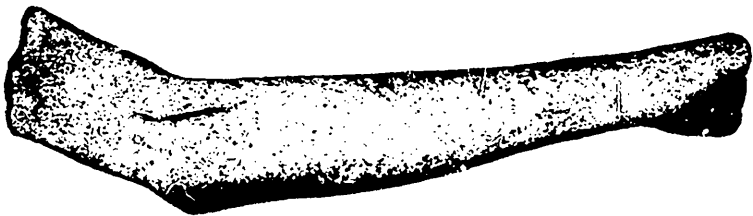
The importance of the movements of the elbow-joint is very great ; and, besides, from an aesthetic stand-point, freedom of motion here is very desirable, since limitation of it always causes a striking peculiarity in the holding of the limb and awkwardness in the movement of it that is very noticeable. As stated before, reduction, even by force, soon becomes impossible. The necessity for early diagnosis and prompt reduction is greatly emphasized.

Where inveteracy is once established, if the deformity is considerable, arthrotomy is indicated. The results of operative intervention have frequently in the past, however, been extremely unsatisfactory, and for two reasons: either too little of the abnormal



New formation of bone on an old, unreduced dislocation. (From Stimson, on "Fractures and Dislocations.")

structures that caused persistence of the dislocation was removed, in which case inevitably it recurred (often under the operation bandage) or too much of the bony structure was removed, an excision of the elbow being practically done, when a flail joint resulted—an eminently undesirable result.

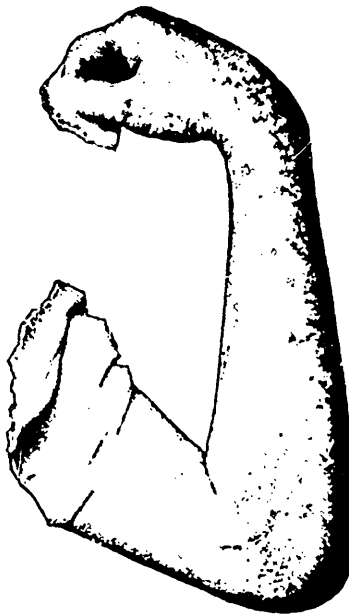


Result of operative reduction of old dislocations. (From Stimson, on "Fractures and Dislocations.")

Professor Stimson, in his new book on "Fractures and Dislocations,"* treats the subject with his well-known practical conservatism. He gives a sketch of new formation of bone on an old, unreduced dislocation of the elbow, as he has seen it in a number of cases. He advises operation for the condition by a long

* "A Treatise on Fractures and Dislocations." By Lewis A. Stimson, B.A., M.D., Professor of Surgery in Cornell University Medical College, New York. Lea Brothers & Co. Just issued.

incision on the outer side, exposing the radius and the mass of new bone. This should be freely chiselled away and the capitellum exposed by free division of the soft parts, keeping the knife at a little distance from the bone so as not to damage the periosteum. The sigmoid fossa is then cleared of fibrous tissues. A second incision is now made on the inner side, curving close behind the epitrochlea or its site, the ulnar nerve is drawn forward and the olecranon freed. If the epitrochlea has been broken off and displaced upward and backward it must be detached from the



Result of operative reduction of old dislocations. (From Simson, on "Fractures and Dislocations.")

humerus, preserving its relations with the lateral ligament. The clearing of the sigmoid cavity is then completed. The only obstacle to reduction then, if there be one, will be the shortening of the flexor muscles of the hand, induced by their action in the abnormal position caused by the dislocation. If necessary, they must be partly divided close to the humerus. Professor Stimson gives a picture of one of his results, which we produce. Altogether he has operated upon some ten cases by this method, and the results have all been flexion within a right angle and extension varying from 120 to 170 degrees, with preservation of rotation.

HEART WOUNDS AND THEIR PROGNOSIS.

It is interesting to note the change that has come over medical opinion in the last few years with regard to the fatality of wounds of the heart. The prognosis of even slight wounds of the organ was formerly considered absolutely unfavorable. When animals were encountered in whose hearts appearances were noticed (and they were not infrequent) that we now know to have been the result of healed cardiac wounds, it was thought that these were due to congenital anomalies or acquired pathological changes, but not traumatic in origin. Penetrating wounds were set down as unfaillingly mortal, but we have changed all that. Only the other day, in New York, the coroner found a bullet in the pericardial sac which had plowed a way for itself through more than an inch of heart substance, yet the patient had lived for fourteen days after the shooting.

In the present issue of the *Medical News* Dr. Burtenshaw reviews the results of more than one hundred cases of paracentesis pericardii, in only one of which was there any serious result, though the varying position of the heart in pericarditis makes it almost inevitable that it should have been more or less injured a number of times. There is, of course, no serious reason why a simple non-penetrating wound of the heart should ever cause death of itself, and even in cases of traumatic penetration nature has shown that she has some marvellous resources at her command that make for conservation of the organism even under most unfavorable circumstances.

Laforgue's statistics of the results of heart wounds, all of which seem to have been substantiated by autopsy, are very striking. The reports of the cases in which cure occurred were collected from the post-mortem records years after the injury had been received, death having been caused by some other agency. In 56 cases of wounds of the heart, 18 were followed by immediate death, 21 patients survived for longer or shorter periods, and 17 completely recovered. Among the recoveries, in 4 cases the wound was inflicted by a pointed instrument, 6 times by a cutting instrument, 4 times by bullets, and in 3 cases by other forms of violence. It is clear that the manner of the violence does not influence the prognosis much. Even wounds of one coronary artery are not always fatal. Twice a healed lesion of the anterior coronary artery has been found at autopsy long years after the infliction of the heart wound.

A very important class of wounds of the heart, and much more fatal than might be imagined from the seeming insignificance of the injury and the instrument causing it, are those due to the

voluntary or involuntary piercing of the heart by needles. Out of twenty-three such cases recorded by Terrier, fourteen were fatal. The direction with regard to these cases is the immediate extraction of the needle, not the gradual removal that used to be advised. The wound of entrance is so small that loss of blood through it need not be feared, and delay in extraction has been the serious-factor in these cases.

In the prognosis of heart wounds a good deal depends on the location of the lesion. Professor Rehn, of Frankfort, whose report of a case in which he successfully sutured the heart after a penetrating wound turned attention generally to the possibilities of conservative surgery of the heart, gives his views as to the prognosis of any special wound of that viscus about as follows: "It is not so much the clot that forms as the contraction of the heart-muscle itself that is the active agent in stopping hemorrhage. Where the muscle is thickest the danger of hemorrhage is least. Though the pressure of blood in the left ventricle is much higher than anywhere else, and this might suggest the conclusion that wounds here would be very easily fatal, the thick muscular wall usually serves as an excellent preventive of serious hemorrhage. Wounds of the right ventricle are not so favorable; of the auricles still less. Fortunately the base of the heart, where danger is greatest, is protected by the bony sternum in front of it, which turns aside many an otherwise fatal injury. In attempts at suicide the popular notion that the heart lies much lower in the thorax than it really does saves many a poor mortal from accomplishing his fatal purpose."

INTRACEREBRAL INJECTION OF ANTITETANUS SERUM.—Ombredanne (*Presse Méd.*) reports a case in which this treatment was adopted with marked success. A boy, 11 years old, fell down and hurt his left knee. The accident was so slight that the mother merely covered the excoriated skin with a piece of plaster. A dry-scab soon formed over the part. The patient never recovered his usual health and spirits after the accident. On admission into the hospital there was some stiffness of the masseters and extensors of the spinal column. In a few days the typical symptoms of tetanus developed. The patient was unable to swallow liquids, and every attempt at examination produced an exacerbation of the symptoms. A hypodermic injection of 40 c.cm. of antitetanus serum had no effect. After consultation with Roux, the author determined to try an intracerebral injection. The skin having been thoroughly cleansed with antiseptics, an incision 1 cm. in length was made over both frontal bones at a point 4 cm. from the middle line and 4 cm. above the frontal protuberance. The skull was.

perforated with a drill in both situations. Meanwhile Roux had prepared a solution of 6 c.cm. from dried serum; half the quantity was injected into the brain substance on each side. The operation was performed with Roux's capillary needle and syringe; the quantity injected could be easily regulated by a screw. The time occupied by the injection was ten minutes on each side. Both wounds were closed with sutures and a little collodion was poured over the edges. The dressing consisted in a pad of absorbent wool moistened with a 1 per cent. sublimation lotion. The next morning the patient continued to have some convulsive seizures; a further subcutaneous injection of 20 c.cm. of serum was administered. An erythematous rash appeared on the trunk and legs twenty-four hours afterwards; this, however, rapidly disappeared. The patient gradually improved, and ten days after the operation he was able to leave his bed. On the twenty-sixth day he left the hospital apparently quite well. The serum used in the intracerebral injection was double the usual strength. In the space of thirty-six hours the equivalent of 72 c.cm. of serum was injected. No psychical disturbance ensued and no hematuria.—Heckel and Reznès (*Presse Méd.*, 1898, No. 74) adopted the above treatment in a case of tetanus without success. A porter, aged 18, received some lacerated skin wounds over his back and arms, which were caused by some rusty nails projecting from a parcel that he was carrying on his back. The accident occurred on August 8th, and tetanus set in on August 13th with trismus, stiffness of the back, muscles and legs. On August 14th the frontal bone was drilled on both sides. The site of operation chosen was a point 6 cm. above the outer margin of the orbit. A solution of dried serum with sterilized water was prepared, and $2\frac{1}{2}$ c.cm. were injected on the left side, whilst $3\frac{1}{2}$ were injected on the right. The treatment had no effect on the convulsions, and a further hypodermic injection of 20 c.cm. of antitetanus serum was administered. Notwithstanding this energetic treatment the muscular contractions became more frequent and more severe. The temperature rose to 41° C., and the pulse was 140 per minute. The patient died forty-one hours after the intracerebral injection and eighty-four hours after the first clinical manifestation of the disease. The authors insist on the importance of observing the very earliest symptoms of tetanus. The fact that trismus is an early clinical sign is of itself proof that the bulb has already become affected, and this symptom should therefore be regarded rather as the precursor of death than the commencement of the disease. The plan of treatment, as far as our present knowledge of the disease will allow, should be as follows: (1) The subcutaneous injection of antitoxin whereby the further development of toxin in the blood is diminished or possibly arrested. (2) The intracerebral injection of antitoxin which pre-

vents the subsequent paralysis of the nerve cells by the toxin. (3) Diminishing the reflex excitability of the patient by isolation, by darkening the room, and preventing any noise or movement of any kind. All food must be given per rectum. Morphine, chloral and chloroform have no effect on the disease, and should be given only when the constant muscular contractions cause great pain.—*Brit. Med. Jour.*

SAFETY IN ANESTHESIA.—The comparative safety and the efficiency of various anesthetics and various methods of administration is a topic of perennial interest and importance. The discussion at the Surgical Section of the College of Physicians, was not less important than any which have preceded it. Dr. Maduro, of New York, who has worked with Schleich, spoke enthusiastically in favor of the mixtures of benzine, ether and chloroform, adopted by the latter. The following are his formulæ :

MIXTURE I. (Boiling-point, 38° C.)
Chloroform, 45 parts.
Petroleum ether, 15 parts.
Sulphuric ether, 180 parts.

MIXTURE II. (Boiling-point, 40° C.)
Chloroform, 45 parts.
Petroleum ether, 15 parts.
Sulphuric ether, 150 parts.

MIXTURE III. (Boiling-point, 42° C.)
Chloroform, 30 parts.
Petroleum ether, 15 parts.
Sulphuric ether, 80 parts.

In the above formulas petroleum ether signifies purified benzine, having a boiling-point, between 60° and 65° C. ; and by "sulphuric ether" is meant the ether (96 per cent. ethyl oxid) of the U. S. Pharmacopœia. The boiling-point of the mixture is the point upon which Schleich lays great stress. He asserts that when the boiling-point is higher than the temperature of the blood the quantity of an anesthetic necessary to narcotize is less than when these are equal ; furthermore, that the narcosis is much greater with a given quantity of the anesthetic, when the boiling-point of the latter is greater than the temperature of the body. Hence, the nearer the boiling-point of the anesthetic approaches the body temperature the less likely are unpleasant results. The boiling-point of chloroform is 65° C., of ether 34° C. By mixing ether and chloroform in definite proportions, with the addition of benzine, Schleich has

succeeded in producing anesthetic mixtures of any desired boiling-point; the use of which, he claims, gives the rapidity of chloroform with the safety of ether, with quick recovery and a minimum of unpleasant results. Dr. Maduro had collected in the neighborhood of 1,000 cases, in which these mixtures had been given by Schleich and others, and the general result of which seemed to be quite favorable.

At the Polyclinic Hospital we have been employing for nearly three years the combined administration of ether and oxygen. The method is very simple. From a cylinder of compressed oxygen, with or without the interposition of a rubber bag as a regulator, the oxygen passes through a wash bottle in which, instead of water, ether is placed, and taking up the anesthetic on its way, enters the patient's nose and mouth through a mask of spun metal edged with a rubber pneumatic cushion and fitted with two valves, which automatically open and close for inspiration and expiration respectively.

If it is desired to increase the amount of ether in proportion to the oxygen, the long tube of the wash bottle is pushed further into the fluid; if it is desired to give very little ether in proportion to the oxygen, the tube is brought nearly to the surface of the fluid; and if oxygen only is to be given, the tube is lifted entirely clear of the fluid—or better, a switch connection is made by which the oxygen passes into the mask without going through the ether bottle. With this method, the patient remains ruddy during the entire process of anesthesia. One feels quite assured of the safety of his patient even in cases in which otherwise he might be in doubt. It is possible that Schleich's mixture used with oxygen might be better than ether. That remains for experience to determine. We certainly feel justified in urging upon the profession that, notwithstanding the rarity of direct accidents from ether, it is their duty to guard against misfortunes, even so little to be expected, by the conjoined use of oxygen. In addition, the fact that anesthesia can be prolonged with so much less ether than is usually the case, diminishes the probability of the unpleasant after-results from irritation of the kidneys, of which surgeons in general take so little account.—*Phila. Polyclinic.*

PURE ANESTHETICS.—At a meeting of the Society of the Anesthetists (*Clinical Journal*, Dec. 7, 1898) William Ramsay stated that the chief impurity of chloroform is carbonyl chloride and that this substance is irritating to the mucous membranes and makes respiration difficult. The presence or absence of this substance makes chloroform "sweet" or "harsh." The impurity, he says, will develop in perfectly pure chloroform. To prevent this

dealers are in the habit of adding a small quantity of alcohol, which inhibits its formation to a great extent, but does not altogether prevent it. With perfectly pure chloroform there is no coughing or oppression of any kind. A small quantity of carbonyl chloride irritates the bronchial tubes, and frequently causes nausea. The inhalation of chloroform is by far the most delicate test of the purity of the product. Ramsay has investigated a large number of samples of chloroform from different makers. In some there was a very small quantity of carbon tetrachloride and some chlorinated products. These impurities, however, were insignificant in quantity and did not affect the safety of the chloroform. He exhibited some recently prepared chloroform made from chloral, which was free from carbonyl chloride. When inhaled, this chloroform did not cause the slightest irritation of the throat. Carbonyl chloride is produced by the action of light upon chloroform, and he thinks that much of the nausea and impairment of respiration is due to this substance. It may be entirely gotten rid of by treating chloroform a few hours before it is used with a small quantity of slaked lime. This has the effect of making the chloroform slightly turbid, but does not alter its value or safety as an anesthetic. For the past three years Dr. Newman, of Glasgow, has been using chloroform prepared in this way, and he gives a table of results :

TIME UNDER CHLOROFORM.	SICKNESS.				TROUBLE.			
	During.		After.		During.		After.	
	O.	N.	O.	N.	O.	N.	O.	N.
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
Under 15 minutes.....	21	8	43	19	11	0	4	0
Under 30 minutes.....	27.5	7	51	18	13	7	5	0
Under 45 minutes.....	29	8	02	21	12	8	7	3
Under 60 minutes.....	31.5	10	78	18	14	7	5	2
Under 75 minutes.....	30	10	78	18	13	6	9	3
Under 90 minutes.....	36	12.5	81	22	15	5	11	4
Over 90 minutes.....	36	11	77	26	14	8	9	2
Average.....	30	9.5	67	20.3	13	6	7	2

Those marked "O" give in percentage the cases in which chloroform prepared from pure alcohol was used, and those marked "N" give the cases in which the same chloroform was used after being treated with slaked lime. The lessened frequency of complications with the neutralized product is significant.

Ether tends to acquire a "sharp" smell, and when breathed to produce uncomfortable effects. On evaporation there is left a

sticky residue, which shows the reaction of hydrogen peroxide. To purify ether, distillation does not suffice. He has found that the best way is to add a few drops of mercury and to shake well. The mercury then becomes coated with a black powder, probably oxide, and the sharp feeling of the ether disappears. Pure ether does not tarnish mercury. Ether thus treated can be used without producing disagreeable effects. It might be equally good to use binoxide of manganese instead of mercury, but Ramsay has never tried it. The only objection would be that the manganese would dirty the inhaler. Neither mercury nor manganese peroxide is volatile, hence no fear need be felt of producing harm by using ether for anesthetic purposes from which the finely divided mercury or dioxide has not settled.

ADVANCES IN OUR KNOWLEDGE OF TYPHOID FEVER.—

Since the sad experience of our troops at home and abroad last year with typhoid fever, medical interest in the disease has been, if possible, even more keen with regard to everything pertaining to it than before. The springtime nearly always witnesses a recrudescence of the disease in various parts of the country, owing to the fact that the melting snows and the spring freshets carry down with them into the water supplies of towns a certain amount of infective typhoid material that has been accumulating during the winter months. Typhoid is one of those diseases of which the practitioner is apt to think that "there is nothing new under the sun," at least, nothing new that has a practical application, or is of value in the prophylaxis or treatment of the disease. A glance, we think, at Dr. Taylor's article on "Typhoid Fever," in *Progressive Medicine*, the new quarterly review of medical progress, edited by Professor Hare,* is apt to disabuse one of any such unprogressive notion. With regard to prophylaxis of others during the treatment of a case of typhoid, these noteworthy recommendations from a French source are given: (1) Isolate patients suffering from typhoid fever, or at least do not permit them to be treated in a room or ward containing young people who have not previously had typhoid. The warning contains some wholesome advice too often neglected, and sometimes with sad results, because we are persuaded that typhoid is not an air-borne disease, and forget that contiguity favors infection because precautions will inevitably sometimes be neglected. (2) Nurses for typhoid cases should, if possible, be only such as have had typhoid themselves. In a family the young people should be removed. (3) The floor of the sick

* *Progressive Medicine*, a Quarterly Digest of New Methods, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D. No. 1, March, 1899. Lea Brothers & Co., Philadelphia.

room should be ciled, so as to be impermeable. Carpets and rugs should be removed, and the raising of dust should be avoided by frequent use of a cloth dampened with antiseptic solution. (4) The nurses should wear linen clothes, which they should remove when they leave the sick room, and in general they should be warned to be circumspect in their relations with others, and especially careful of the utmost details of antiseptics in the matter of the preparation of food and drink for themselves and others. The review of the question of typhoid infection from oysters is full and conclusive. The possibility of typhoid infection through salads is made clearly apparent—manure being used in bleaching the plants and gardeners being careless in handling it, and washing the plants in any sort of water, or sprinkling them with infected cistern water. The strikingly practical features of this excellent review of the recent literature of typhoid, are the discussion of the question of typhoid without intestinal lesions, and of its corollary that intestinal lesions, even when existent, often play a very minor role in the disease. How important these questions are for the matter of treatment is clear at once. All the so-called abortive methods of treatment, all the much-lauded systems for securing intestinal antiseptics, all the many drug formulæ and combinations that have been enthusiastically recommended for the treatment of typhoid, assume that the essence of the disease is the intestinal lesions. This is a notion that must disappear before scientific advance of our knowledge of the true nature of the disease.

THE RENAL THEORY OF GOUT.—Critzman (*Archives des Sciences Méd.*) discusses the various views as to the pathogeny of gout, and having weighed all the evidence, concludes that the process is most likely as follows: Uric acid is not a normal constituent of the blood, but just before or during an attack of gout it is to be found constantly; at the same time the amount excreted by the kidneys is just as constantly diminished. This never occurs with healthy kidneys, which are capable of excreting several times the normal quantity of uric acid, and in such a case it follows that the renal tissue must be diseased. The realization that the so-called gouty kidney is the primary cause of gout, and is not secondary to it, gives the key to the right understanding of the whole disease. Take the case of gout in chronic lead poisoning. Luthje and Weintraud have shown that the administration of salts of lead to animals in no way lessens the amount of uric acid excreted by the kidney. This proves that lead alone cannot produce retention of uric acid and uricemia, and that it does not become pathogenic until it has deranged the kidneys. But this once done uric acid is deficiently excreted, is absorbed into the blood, and

saturnine gout is established. However sluggish a metabolism an individual may have, however hereditarily predisposed he may be, with healthy kidneys he can absorb relatively large doses of lead without having an attack of gout. Exactly the same is true of hereditary non-saturnine gout, though here alcohol is the poison which most often causes the necessary lesion in the kidneys. Alcohol is probably not the only cause. Infectious diseases damage the kidneys in persons predisposed to gout more than others. Accepting the view, as the writer does, that uric acid is formed in the kidneys chiefly or solely from the decomposition of the nucleins present in the body, it is evident that, given nephritis and consequent retention of uric acid, a diet rich in absorbable nucleins, or the onset of any disease accompanied by leucocytosis, will produce a precipitation of uric acid in the tissues, already weakened in their nutrition by the presence of blood containing toxic substances. Anatomically the renal changes in the later stages of gout, whether they are caused by lead or alcohol, are those of the typical contracted red granular kidney. Now Brault has shown that the primary lesion in this form of nephritis is localized in the convoluted tubes, and it has been proved, chiefly by experiments on birds and reptiles, that it is precisely this part of the renal apparatus which is concerned in the excretion of uric acid. The tubuli contorti may be affected for years before nephritis is clinically evident, and in such a case the existence of gout is sufficient evidence of nephritis, though it may be in a very early stage. Just as there can be no gout without uric acid, with uric acid there can be no gout without chronic nephritis. What has been said about the origin of uric acid explains the contradictory results obtained by different observers with different diets; the important point being, not whether it is animal or vegetable, but the amount of nucleins contained in it.—*Brit. Med. Jour.*

SUGAR FROM ALBUMIN.—Some time ago Blumenthal reported that he had obtained a sugar from white of egg by treatment with hydrochloric acid, and that it was probably a product of the dissolution of the albumin molecule. Subsequently several other observers obtained similar results, and in following up the inquiry with Paul Meyer a sugar was obtained from the albumin of egg yolk. Analysis showed that both this sugar and that obtained from white of egg albumin was a hexose. Judging from the characters of the osazone it was not mannose or fructose, and the question whether it was galactose or glucose was not positively settled. Moreover, it appeared that other carbohydrates could be eliminated from albumin, forming osazone compounds similar to that of the pentose obtained from nuclein. In regard to the ques-

tion as to the origin of the carbohydrate obtainable in this way Blumenthal agrees with Krawkow in thinking that it should not be regarded as an integral part of the albumin molecule, since they were able to ascertain that after the separation of the carbohydrate group a residue remained having the characters of albumin, but no further carbohydrate could be obtained from it by repeating the treatment with acid. Hence they infer that in the elimination of the carbohydrate there is no dissolution of the albumin molecule as in the case of putrefaction or in pancreatic digestion. More probably the albumin molecule, having a varied capacity of combination with other substances, such as acids and alkalis, is capable of entering into combination with carbohydrates and forming compounds analogous to glucosids.—*Berichte*, 32, 274.

Correspondence.

INTER-PROVINCIAL REGISTRATION.

To the Editor of DOMINION MEDICAL MONTHLY :

DEAR SIR,—The present time is a most favorable one for the movement which is being so ably furthered by Dr. Reddick, our popular and influential representative in the House of Commons. Not only have we Sir William Hingston to support him in the Senate, but at the present time the provincial legislatures are all in accord with the Federal Parliament, and will do almost anything which the latter may ask of them. The Colonial Secretary, Mr. Jos. Chamberlain, is most favorably disposed towards Canada, and with his immense influence could obtain for us any legislation we might require. With the whole profession in Canada in favor of it, and the provincial medical boards and legislatures raising no objection to it, I think that there would be no insurmountable difficulty in getting a short Act passed by the Parliament of Canada and even, if necessary, by that of Britain.

I would, however, like to point out a much simpler method of obtaining what they desired, namely, by changing the name from Dominion Board to University of Canada. There was nothing in the British North American Act to prevent the Parliament of Canada from granting a charter to a University of Canada, with power to grant degrees in medicine, the holders of which would be entitled to practise in all parts of Canada. The Act granting this charter could, if necessary, be ratified by the British House.

As the University of Canada would be an examining body and not a teaching one, it would in no way interfere with the rights of the provincial boards or medical schools, which would continue

to carry on their work precisely as they are doing at present, for those who were satisfied to practise in their own province only. Those who wished, however, to practise all over the Dominion, must pass through a uniform portal, the barriers of which, should be at least as high as those of any provincial board, and that portal would be the matriculation and final examinations of the University of Canada. Even when armed with this degree its holder must obey the same regulations and pay the same fees annually as the other practitioners of the province in which they desire to practise. By calling it the University of Canada it would become a national institution and an object of national pride, so that the Government of Canada would come to its aid financially during the first few years, after which it would be self-supporting. I do not see any difficulty as regard either the matriculation or final examination. Some man of high standing would be appointed in each provincial capital or chief city, to hold the entrance examination simultaneously. Sealed examination papers would be sent to him some days before, but would only be opened by him after all the candidates had entered and the doors were locked. This would be taking place at the same hour and minute in the seven distant cities. When the allotted time was up the papers would be signed and sealed by the examiner and forwarded to the central committee, who, without knowing the writer's name, would apportion the merited marks and forward certificates. On presentation of these certificates and proof of five years' study of medicine the candidate could come on a fixed date every year before the examiners of the university, who would be chosen from the present provincial examiners or other eminent teachers. As to the clinical examination, the Committee on Clinics, together with all the candidates, could take a two hour and a half ride down to Montreal and hold the examinations at the big hospitals, and return to Ottawa the same or the following day. As soon as the results of those examinations had been added to the others the convocation could be held and the degrees signed and given by the Governor-General. The examination might be more severe on practical subjects for those who have been over ten years in practice and more severe in theoretical subjects for those who had just left the medical school. The fees should not exceed fifty dollars, which, with a government grant of ten thousand dollars a year for ten years, would be ample to defray all expenses, as examinations would be held only once a year, in the month of June. Trusting that you will help both personally and editorially to remedy this anomaly of thirty years' standing,

I remain yours sincerely,

A. LAPHORN SMITH.

Issued March 22nd, 1899.
P. H. BRYCE, Secretary.

MONTHLY REPORT.

Issued by the Provincial Board of Health of Ontario for February, 1899. Showing the deaths from all causes and from Contagious Diseases in the province, as reported to the Registrar-General by the Division Registrars throughout the Province.

YEAR.	MONTH.	Total population of province.	Total population of province, 777.	Total deaths reported from all causes.	Rate per 1,000 per annum from all causes.	Scarlatina.	Rate per 1,000 per annum.	Diphtheria.	Rate per 1,000 per annum.	Meningitis.	Rate per 1,000 per annum.	Whooping cough.	Rate per 1,000 per annum.	Typhoid.	Rate per 1,000 per annum.	Tuberculosis (Consumption).	Rate per 1,000 per annum.
1899	February	2,258,182	717	2,508	13.7	32	0.1	35	0.2	2	0.03	3	0.01	16	0.07	215	1.1
1899	January	2,232,053	717	2,154	11.6	23	0.1	48	0.3	5	0.03	0	0.05	21	0.1	181	1.0
1898	December	2,173,006	687	287	.....	10	0.03	51	0.3	2	0.01	12	0.07	21	0.1	141	0.8

YEAR.	MONTH.	Total population of province.	Total number of patients reporting.	Total deaths reported.	Rate per 1,000 per annum from all causes.	Scarlatina.	Rate per 1,000 per annum.	Diphtheria.	Rate per 1,000 per annum.	Meningitis.	Rate per 1,000 per annum.	Whooping cough.	Rate per 1,000 per annum.	Typhoid.	Rate per 1,000 per annum.	Tuberculosis.	Rate per 1,000 per annum.
1898	February	1,519,708	553	221	.....	15	0.1	38	0.3	0	0.07	10	0.07	19	0.1	132	1.0
1898	January	1,659,771	582	238	.....	16	0.1	51	0.4	4	0.03	8	0.03	13	0.1	146	1.0
1897	December	1,540,014	560	218	.....	5	0.03	30	0.3	0	.....	13	0.1	22	0.2	136	1.0

*The months of January and February, 1899, include deaths from all causes, but the other months from contagious diseases only.
7 deaths occurred from smallpox.

DOMINION MEDICAL MONTHLY

AND ONTARIO MEDICAL JOURNAL.

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No. 4

NEW ANTIPYRETICS.

The new antipyretics may be divided into three groups: those which are derivatives of phenetidin, therefore related to phenacetine and acetanilid; those derived from quinine, and those from antipyrin—that is, from pyrazolon. The first class have distinct antipyretic action, but also the dangerous secondary actions seen so often after acetanilid. Their mother substance phenetidin, and especially aniline, are blood poisons, causing nephritis, etc., even in small quantities. Lactophenin (lactyl phenetidin) has caused swelling of the liver, and occasionally collapse from even 0.25 gm; malakin (salicyl phenetidin) and phenocoll hydrochlorate (amido-acet-phenetidin), which have frequently caused dyspnea and collapse, are to be used with caution. Kryofine (methyl-acet-phenetidin) is the safest of these. Amygdophenin (ethyl amygdophenin) is an uncertain antipyretic, but has been useful as an antineuralgic and antirheumatic. It has not as yet proved very toxic. Dose: 1 gm. several times a day, or, daily, 5 gms. Citrophen (phenetidin citrate) owes its activity to the large percentage of phenetidin present. The phenetidin is only very loosely

bound to the citric acid. In citrophen there is one citric acid molecule associated with three molecules of phenetidid. Apolysin (monophenetidin citrate) in which one molecule of citric acid is associated with only one of phenetidid, even in doses of 0.5-1.0 gm. several times a day, has not shown any untoward symptoms. This agent deserves wider use. Tablets are made of one part of sodium bicarbonate with two of apolysin. This combination is better borne than pure apolysin, which reacts acid. Malarin (aceto-phenonphenetidid) is also without untoward symptoms. It is a strong antipyretic, and from its relationship with hypnon (aceto-phenon) is an antineuralgic. Its dose is 0.5 gm. To cover the unpleasant taste of quinine various substitutes have recently been tried. Euquinine (quinine, carbonic acid, ethyl ester) is not to be distinguished qualitatively from quinine in its therapeutic action, but larger doses are necessary than in the case of quinine; 1.5 to 2 gms. euquinine corresponding to 1 gm. quinine. Euquinine has very little of the unpleasant taste of quinine, and is therefore suitable for children. The hydrochlorate, however, tastes bitter. The pure base is given twice daily in doses of 1 gm., or the tannate may be used in larger doses. Chinaptol (quinine naphtholsulphonate) contains 42 per cent. quinine. No judgment can yet be passed on this compound. Chinopyrin is an addition product of antipyrin and quinine hydrochlorate. Laveran used the solution of quinine hydrochlorate in antipyrine for subcutaneous use, and Santesson, by physical chemical experiments, showed that the electrical conductivity of the solution pointed to a new body. The solution used is quinine hydrochlorate, 3.0; antipyrine, 2.0, and aq. destill, 6.0. The dose for subcutaneous injection is 1 to 2 c.c. It is painless. As yet little can be said of the new compound anilipyrin, which is a combination of acetanilid and antipyrin. Pyramidon (di-methyl-amido-antipyrin) is, according to Filelme's investigations, four to five times as toxic as antipyrin. It causes increased reflex excitability passing over into paralysis. Small doses increase the blood pressure in rabbits. In dogs and guinea-pigs large doses cause the appearance of much sugar in the arterial blood. While it does not affect the non-febrile temperature, yet it rapidly reduces the temperature in fever. The pulse and temperature of healthy men are scarcely influenced by it; 0.5 gm. cause slight reddening of the face, and a slight diaphoresis. In man its antipyretic and toxic dose is one-third that of antipyrin. The fall in temperature is milder and more persistent than in the case of antipyrin. It has been used as an antipyretic in the infectious diseases, and as an antineuralgic in migraine, etc. In acute rheumatism it is considered equal to salicylic acid. The dose is 0.3 gm. three times a day. After twenty minutes its presence can be demonstrated in the urine.

TREATMENT OF RENAL DISEASES.

In some notes on the hygienic diatetic, and especially the climatic treatment of renal diseases, H. Senator says, in the *Ther. d. Gegenwart*, 1899, p. 9: While it is not said that renal diseases, and especially albuminuria, cannot be favorably influenced by drugs, yet much less is accomplished directly than by an indirect action on the general condition, blood pressure, etc. In this manner iodine, iron, etc., are of use. Our main reliance now is upon hygienic and diatetic methods of treatment, but even these are frequently futile in chronic cases. In acute renal diseases, and in acute exacerbations the food should be limited as much as possible, especially the nitrogen, to avoid irritating the kidneys unnecessarily. Muscular rest, especially of the lower extremities and lower abdominal region, influence favorably albuminuria. In cases of acute nephritis simply standing renders the urine richer in albumen, in chronic cases light movements are not injurious, in fact they are to be recommended, but severe muscular movements cause increased albuminuria. Bicycle riding is to be avoided in renal diseases, especially in albuminuria, with or without disease of the vessels. The skin should be carefully protected from cold; at those seasons with marked temperature variations, woollen or half woollen underclothes should be worn. Heat acts favorably, it seems to relieve the kidneys of some of their work. This is not fully understood, as the skin, even during its greatest activity, can eliminate little or none of the specific urinary bodies (urea, uric acid, kreatin, etc). There is doubt as to whether the fatty acids and other volatile products eliminated by the skin, influence the kidneys. The good influence of heat may be due to some change in the circulation, but as to what it is we know nothing. The climatic treatment has been underestimated; occasionally complete cures result, especially in subchronic cases, but improvements and stoppage of the disease are frequent, the urine contains less albumen and casts, etc. This improvement occurs not only in chronic nephritis, but also in amyloid degeneration, and in purulent conditions of the kidneys. The climate should be warm and dry. The dryness of the warm air favors the evaporation from the skin and lungs, thus relieving the kidneys, and the dry, warm climate is not so enervating as a moist, warm climate. Sunlight and abundance of fresh air are of the greatest importance. Cairo, Luxor and Assuan, in Egypt, Algeria, Bombay, Texas, South Georgia and South Carolina fulfil the conditions.

Editorial Abstracts.

NEW REMEDIES.

Salol, the phenol ester of salicylic acid, is a combination of salicylic acid and phenol. Phenol itself should not be given in more than 0.5 gm. a day, and salicylic acid in over 5 gms., yet salol, which contains 60 per cent. salicylic acid, may be given in doses up to 8 to 10 gms. a day. In vesical catarrh salol, even in small doses, hinders the decomposition of the urine and the formation of pus. Its antipyretic action is only slight. The untoward symptoms, which at times occur, are those of its mother substances—phenol and salicylic acid. It is best avoided in nephritis. Salophen, or the acetyl para-amido phenol ester of salicylic acid, breaks up into 51 per cent. salicylic acid, and the relatively non-toxic body acetyl para-amido phenol, so that it is less liable to cause untoward symptoms. Salophen is a white, almost odorless and tasteless powder, which is decomposed by alkalies and the pancreatic juice into its constituents. In chronic rheumatism it is less effective than salol, but is useful in the acute form. Creasote is a local irritant and caustic, as is also its chief constituent, guaiacol. Creasotal, which is creasote carbonate, is a yellow, honey-like, clear fluid without odor and with a taste like a fatty oil. Duotal, or guaiacol carbonate, is a white crystalline, odorless and tasteless powder, which is insoluble in water. Both creasotal and duotal are devoid of caustic action, and do not disturb the appetite. These two preparations are used in the creasote treatment of tuberculosis. Xeroform, or tri-brom-phenol bismuth, has been introduced as a substitute for iodoform. Its antiseptic power is slight. Its bismuth limits secretion and dries the surface of wounds. It can be sterilized at 110° C. without decomposition. It is not irritating, and from its desiccating action it acts as a deodorizer.—KIONKA. *Ther. d. Gegenwart*, 1899, p. 126.

EXPERIMENTAL RESEARCHES ON THE THYMUS.

TARULLI, L. and LO MONACO, D.—Experimental researches on the thymus. (*Boll. della R. Accad. med. di Roma*, v. 22, 1896-97, fasc. 6-7.) Dogs, even a few days after birth, bear well the extirpation of the thymus and live without it. These animals nurse longer and oftener than usual. Their hair becomes coarse and bristling and falls out easily. Their weight is less than normal and the muscles are pale and badly nourished. Various anomalies in their skeletal development were observed. After two or three months have elapsed the dogs gain in weight and begin to be well

nourished like the control animals. The animals at first are less resistant to fatigue and resist less well intercurrent troubles. There is also a transitory, more or less grave, anemia. Of eighteen young chickens, two to five days old, from which the thymus was removed, fifteen died in seven to eight days after the operation with the following symptoms: weakness of the limbs, uncertain gait, slight trembling extending over the whole body, especially marked two or three days before death and torpor more or less marked. The hemoglobin and hematin of the blood was diminished and the leucocytes were increased in number.—From *Arch. ital. de Biol.*, v. 30, 1898, p. 148.

CHEMICAL COMBINATION OF THE TETANUS POISON WITH NERVE SUBSTANCE.

MILCHENER, R.—Proof of the chemical combination of the tetanus poison with nerve substance. (*Berl. klin. Woch.*, 1898, p. 369.) According to Ehrlich's view the anti-bodies are merely groups of nerve cell substance, which during immunization are formed in excess and passed into the blood, so that there is probably a definite relation between the brain cells and the tetanus poison. Wassermann showed that a brain emulsion, consisting of one-third brain substance, could neutralize ten times the lethal dose of the tetanus toxine, while the filtered emulsion would not. Milchener centrifugalized the mixture of brain substance and tetanus toxine and found that the clear fluid had the same action as the emulsion except that the latter had a prompter action. His investigations show that the combination of tetanus toxine with the brain is a purely chemical one, independent of vital changes. The combining body is contained in the brain cells in an insoluble form. It attracts the poison to it and renders the fluids free from poison. The antitoxic body is destroyed by boiling.

THE TREATMENT OF URÆMIA BY SUBERMAL INJECTIONS OF DECINORMAL SALINE SOLUTION.

Dr. Potcenko reports two cases of acute parenchymatous nephritis (*Medicinskoe Obosvenie*, Bd. 50, Heft 8, 1898) treated by subcutaneous injections of physiological saline solution. In both cases severe uremic symptoms were present, and the quantity of urine passed was small. Three hundred cubic centimetres of salt solution at a temperature of 40° C., were injected each time. A beneficial action of the fluid was noticed after the first injection, and manifested itself in a regulation and toning up of the heart action, in a subjective improvement of the general condition of the patient, and almost always by an increased secretion of urine. Both cases were completely cured by this method of treatment.—*Medical Record*.

TREATMENT OF SYPHILIS WITH INTRAMUSCULAR CORROSIVE SUBLIMATE INJECTIONS.

To introduce as little mercury as possible into the body in the treatment of syphilis, Glueck recommends the use of intramuscular sublimate injections. As soon as the diagnosis has been verified by the appearance of the constitutional symptoms, the patient is given an injection of a 1% solution; after one day's interval, a 2%; and on the third day, after the last, a 3%. If the symptoms show no signs of subsidence or relapses occur, three days later a 4%, and four days later, a 5% injection is used. Usually now in mild cases the symptoms are very slight. The concentration of the injection is now gradually diminished. It is not always necessary to push it to a 5% solution. Hildes believes this method allows the widest individualization and avoids oversaturating the body with mercury. It has especially favorable action in laryngeal syphilis.—From *Ther. d. Gegenw.*, 1898, n.s., v. 4, p. 744.

ACTION OF THE ADRENAL EXTRACT UPON THE EYE.

LEWANDOWSKY.—Action of the adrenal extract upon the eye. (*Cent. f. Physiol.*, 1898, p. 599.) Intravenous injections of adrenal extract in cats, causes symptoms similar to those from irritation of the cervical sympathetic—dilatation of the pupil, retraction of the membrana nictitans, protusion of the ball and a narrowing of the palpebral fissure. The last two symptoms are less marked than the others. A large enough dose will cause maximum dilatation of the pupil, which is not completely removed by eserine. These symptoms appear a few seconds after the injection and lasts a few minutes. They may be prolonged by cooling the animal. It is a peripheral action.

TREATMENT OF CROUPOUS PNEUMONIA WITH SILVER NITRATE.

In six cases of croupous pneumonia Caccianiga produced a rapid fall in temperature and gradual subsidence of the pulse frequency and local symptoms by the use of silver nitrate 0.15 to 0.10 pro die. In the first few days he gave hourly one pill, using 0.15 gm. a day, then up to the beginning of resolution and the appearance of crepitatio redux a pill every two hours, using 0.10 gm. during the day. In a twelve year old child the daily dose was 0.05 gm.—From *Ther. d. Gegenw.*, 1898, n.s., v. 4, p. 713.

BRONCHITIS.

CHARBONNEAU.—A full dose of Dover's powder will frequently abort an attack.

OSLER.—Opium should be freely used in the form of Dover's powder. No remedy can take its place.

W. T. ENGLISH.—The following therapeutic results are from the use of opium in full doses: Reduction of irritability, congestion, or inflammatory activity. Alteration in the character and limitation of the amount of the secretion. Increase in the general comfort by relief of pain and soreness, and removal of cough and incidental insomnia. Speedy and permanent cure of eighty per cent. of the cases.—*Medical Record*.

EARACHE.

(1) Cocain, five to ten per cent. solution, in the canal. (2) Cold about the ear, hot applications in the ear. (3) Covering the ear with dry cotton. (4) Hot-water bottle. (5) Air douche, with Politzer bag; but this only when acute symptoms have subsided. If well borne it can be used, but if it causes pain it is contraindicated.—*G. L. Richards, in Medical Record*.

ORTHOFORM, NEW.

Orthoform new is the m-amido-p-oxybenzoic acid methylester—while the old orthoform is the corresponding p-amido combination. Klaussner claims that the new one does not cake together so much is cheaper and possesses the same local anesthetizing action.—*Therap. Monats.*, 1898, p. 640.

Physicians' Library.

The Ready-Reference Hand-Book of Skin Diseases. By GEORGE THOMAS JACKSON, M.D. Third edition, just issued. Lea Brothers & Co., Philadelphia and New York.

Someone said, not long ago, that the ideal symbol of faith was not the traditional maiden clinging to the Rock of Ages, but the bald-headed man confidently consulting the bald-headed specialist and faithfully looking for relief for his bald-headedness. It is a very suggestive symbol of human limitations, but when hair follicles are gone it would take a special creative act to replace them and the hirsute appendage they furnish. The treatment of premature baldness, however, is not so hopeless if it is taken in time, and skin specialists are agreed that much can be done for the condition if properly treated by prophylaxis and early attention. In these preliminary stages and before the real beginning of the alopecia, properly so called, the cases come into the hands of the general practitioner. Too often he is apt to make little of them, or to consider that they are inevitably progressive anyhow, and so a deformity is allowed to supervene that is unsightly and the cause of a great

deal of annoyance to the patients. Prophylaxis is especially important. Dr. Jackson, in his "Manual of Skin Diseases," insists on two things: the influence of heredity in these cases, and the etiological importance of dandruff. Fathers and sons for generations may grow bald early, or the inherited peculiarity may have to be traced to the grandparents or some collateral line. Not all the children in one family in which baldness is hereditary are bald, but it will manifest itself in two or three of the children. The necessity for prophylaxis in these cases is evident. *Hygiene of the scalp* must begin at the very beginning of life and be continued persistently. Its details, as given by Dr. Jackson, are irksome, but most mothers whose sons are threatened with their father's early baldness will be perfectly willing to take the additional trouble; and as for the sons themselves, as soon as they come to the years of indiscretion (or vanity), which is generally considered to be about the age of fifteen, they can usually be depended on to take for themselves all necessary precautions to stave off the unwelcome parental inheritance. As to dandruff, it constitutes, according to Dr. Jackson, the cause of 70 per cent. of the premature baldness that occurs. Not that everyone that has dandruff will become bald—experience is against that; but it is very often true that an error in the nutrition of the sebaceous glands causes sympathetic trophic disturbances in the hair follicles, and hair production ceases. In this class of cases early treatment is of the utmost importance. Lassar's method requires the taking of a good deal of trouble on the part of the patient, but it is deservedly popular because of its frequent success. In general, however, the cure of the condition causing the dandruff, which is now considered to be, in all cases, a form of eczema seborrhoicum, will stop the loss of hair. Persistence of treatment for months is necessary, but will nearly always be crowned with success if the condition was not too far advanced when treatment was begun. When there is absolute baldness, it is extremely doubtful if anything can make the hair grow.

Progressive Medicine.—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 490 pages, 28 illustrations and 3 colored plates. Lea Brothers & Co., Philadelphia and New York.

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material, an effort has been made to represent medical advance. The mass gathered in such publications is left for the reader to sift and digest, a mental process which the immensity of modern medical advance has rendered a virtual impossibility for the average reader, who must nowadays rely upon the specialist to reduce science to applicable form. Recognizing this fact, Professor Hare has secured a corps of the most capable and advanced men, each of whom tells in his own language, and in the form of an interesting narrative, the story of medical progress in his special line. The four volumes which will be published each year will cover the entire round of practical medicine in the broadest sense, and their appearance at intervals of three months, instead of annually, will ensure the more rapid diffusion of knowledge, which is a requirement of our times. The first volume, just issued, is a substantial octavo of nearly 500 pages, illustrated with engravings and colored plates, and, as the yearly price for the set of four volumes is only \$10.00, it is evident that an exceedingly large demand is anticipated. That these expectations will probably be fulfilled is a fair prediction in view of the admirable manner in which the able contributors have executed Professor Hare's novel and ingenious plan.

The International Medical Annual, 1899.—Messrs. E. B. Treat & Co. say, "It will be seen that we have followed our usual practice in making this work something more than a mere retrospect of the past year. It includes a series of articles intended to bring the readers' knowledge up-to-date on subjects of modern investigation, and the present volume contains new matter of practical interest concerning almost every known disorder. Among the special articles will be found the following: 'Practical X-ray Work,' by R. Norris Wolfenden, M.D., B.A.; 'Advances in Skull Surgery,' by Seneca D. Powell, M.D.; 'Surgical Treatment of Paralysis,' by Drs. Robert Jones, F.R.C.S., and A. H. Tubby, M.S., M.B. These articles will be freely illustrated, chiefly by reproductions from photographs. 'Climatic Treatment of Consumption,' by F. de Havilland Hall, M.D., F.R.C.P. An article on 'Legal Decisions Affecting Medical Men,' by William A. Purrington, A.B., LL.M., will be found interesting and pertinent. In response to the request of many of our subscribers there will be found an article on 'The Chief Pathogenic Bacteria in the Human Subject,' with descriptions of their morphology and methods of microscopical examination, by S. G. Shattock, F.R.C.S., the Pathological Curator of the Museum of the Royal College of Surgeons, London, illustrated by a series of finely colored plates."