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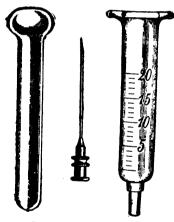
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THE CANADA LANCET.

Vol. XXXII. TORONTO, DECEMBER, 1899.

No. 4.

SOME HISTORICAL AND OTHER DATA ON CIRCUMCISION

BY N. E. ARONSTAIN, M.D. Ph. G.

Chinical Assistant of Dermatology and Venereal Diseases, Michigan College of Medicine and Surgery, 418 Hastings St., Detroit.

Circumcision is the act or custom of cutting off the prepuce of the male; it is enjoined upon the Jews by the Mosaic law, which commands, that every new born male, reaching the age of eight days, shall undergo this ritual operation. With put few exceptions, the custom and time of ritual procedure is closely adhered to. There are, however, cases which demand a postponing of, if not altogether an abstainance from this The former is true in instances, where the child is too weak to withstand the shock on the sequelar of the operation. Delicate children are very often circumcised at 2, 3, 6 or even 12 months of age, the guide obviously being the state of health, and general condition of the Medical opinion is therefore conclusive in cases of doubt or As a rule however the most delicate children stand the uncertainty. operation without evil consequences.

If from any reason, the physician pronounces the child to be unfit for the operation, the time may invariably be lengthened for an indefinite Any cutaneous diseases preceeding the date of circumcision or coincident with it, are grave obstacles to the performance of this rite. It is therefore imperative, the cutaneous surface be healthy and normal before attempting any operative procedure. This conclusively shows, that the most ancient jewish hygrenists and sanitarians were well aware of the dangers of infection, which are apt to follow a wound in connection with cutaneous disorders. This seems to correspond with modern ideas on the subject of infection from the integument. There are many theories advanced, as regards the assigned time of circumcision. Perhaps some may ask, why circumcise on the 8th day? This question could be answered by saying that a religious axiom does not require any commentaries or questions. It is an axiom and therefore will invariable be followed more or less verbatim.

Modern thinkers however, find a clue to it, which is logically compatible with the present state of our physiological knowledge. Physiologists and embryologists admit that the foramen ovale becomes obliterated at or about the 8th or 10th day of infantile life. Old "Maimonides' mentions, that circumcision shall only be performed after "the blood i

in good order," which is apt to be on or about the 8th day. There is no difference then between these two statements. The modern physiologist mentions, Maimonides however omits the physiologic process of the closure of the foetal foramen. As regards the practical aspect of it, they both agree, viz., "the full establishment of the adult circulation." are other theories predominating, but the most pausible one seems the Circumcision may be altogether abandoned in some above mentioned. A rabbinical law forbids circumcision in any case, where individuals. previous male children of the same family, have died as a result of the after affects of the operation; in short when a peculiar tendency or idiosyncrasy from some source exists in a family, which favors a fatal result in repeated circumcisions, the future male offspring of the same family is exempt from this operation, unless absolutely known, that he will not succumb to it. Of course in such cases medical advice is sought for and depended upon. It would not be out of place here, to say a word about the modus operandi in ritual circumcisions.

The operation is performed by a professional man known among the Hebrews as a "Mohel" or "Circumciser," who conjointly exercises the function of a "Shohet" (killing fowl and cattle by the ritual method).

On the 8th day an assembly of ten persons is summoned to the parents house, among them the Mohel and Rabbi of the community. After several ritual observations, the child is carried in on a pillow by an The Mohel, situated visattendant and placed on the lap of the Rabbi. a vis, grasps the prepuce between his index and middle fingers of the left hard, or else compresses it with a certain kind of forceps especially constructed for that purpose somewhat the shape of a horseshoe, taking care not to include the glands and with a sweep of the knife cuts This is termed the "Circumcision proper." Next follows the separation of the mucous membrane of the prepuce from the latter and to some extent from the sulcus and glands; this is known as "Periah" or "Uncovering" and is effected either by the nail or by a shield-like instrument-only recently introduced-surrounding the thumb, similar to the thimble arrangement used in the removal of adenoids. This forms the No sutures are most important ritual step during this precedure. inserted to bring the wound in opposition, but left to heal spontaneously, and in almost all instances healing takes place by first intention. The third step consists in sucking the bleeding area by the mouth of the This latter mode, termed "Mezizah" or "Buccal Suction," is but very little practiced at present and has given place to modern However it is observed in some parts of antiseptics and haemostatics. Poland, Russia and Galicia, but is considered as unessential. The modern Mohel utilizes aseptics and antiseptics; thus previous to the operation the knife is submerged for five minutes in boiling water, to which carbolic The parts are carefully disinfected, by washing acid has been added. At the close of the operation the them with an antiseptic solution. bleeding area is mopped off by pledgets of sterilized or absorbent cotton and boric acid or aristol dusted over it, and the organ is finally enveloped in We may with certainty say, that all aseptic and antiseptic rules and precautions are carried out to the fullest extent. Nothing remains what could be commented upon or throw a shadow of sepsis upon the operation. For some reason the third day after the operation is considered a dangerous one, the Mohel visits the child on that day; scrupulously examines his genitalia, redresses the wound and if any febrile or other manifestations are present, summons medical aid. reproach from an aseptic standpoint, which may mar a ritual circumcision is unfounded and baseless. Circumcision is also practiced as a rite by Mohammedans, and takes place about the age of puberty, which in their estimation is the thirteenth year. It is obligatory and constitutes an important command of the Korán. The Abyssinian christians--who by the way are more Jews than christians—are deprived of their prepuce in a like manner late in adult life. It is claimed, that King Menelik was circumcised right after his ascension to the throne. Abyssinians don't use a metallic instrument of any description, but shells, corals and sharp stones in performing this rite. That reminds one of the biblical episode, in which Zeparah, the wife of Moses, circumcised her eldest with a sharp stone (Leviticus). Again Joshua introduced compulsory circumcision in his army, which was performed by means of sharp fragments of rock, and said unto the sufferers: "Now, God has effaced the shame of Egypt from ye" (Joshua).

We shall return to this "shame of Egypt" later on in our historical description on that subject. At present suffice it to say that in ancient times the followers of the rite of circumcision utilized any sharp instrument—from the knife to the shell—as long as the ultimate result was effected by it. The Egyptians had a special instrument for that purpose. Circumcision is employed in individual instances among all civilized people for remedial purposes and has gained a wide reputation among parents of other religious denominations as a prophylactic for syphilis and venereal diseases. That the latter is a fact corroborated by numberless instances cannot be denied and the syphilogist and general practitioner is aware of the important sanitary results obtained by it.

The history of circumcision offers but very few points of interest. It is submerged in an ocean of obscurity and the slight information we possess on that subject is rather questionable. The origin of circum-That it began at the cradle of human kind, Asia cision is unknown. and especially in the Orient is an assertion quite plausible. writings, notably the Sanscrit (?) claim Ceylon as the birthplace of cir-That this is rather doubtful is expressed in the singular fact that but very few inhabitants of the island are circumcised and these few belong to the Mohammedan sects There is no tradition among the Malays that at any time there existed such a rite as circumcision. and its various ramifications, the plateau of Thibet, show no clue that such an operation was ever in vogue. That perhaps the compulsory diminution of the feet of the Chinese fair sex has been substituted for the circumcision may have a fair foundation as we shall see in some other part of this article. No doubt the æsthetic feature of the above is the main cause for carrying it into effect. The Hindoos practiced circumcision at or about 3000 B. C. in a very peculiar and singular manner. They circumcised their females. Even up to date the same barbarous and odd

operation is performed among some tribes of Egypt and Central Africa-It consists in cutting off a flap from the labia minora. Probably the Chinese custom of the foot-diminution is but a substitute in lieu of the labial circumcision. The Hindoos however preferred the clitoris as the part to be circumcised and as we know that the organ resembles in many respects the male penis we are not surprised at this singular oddity. Some of the tribes in Central Africa, even in the present decade, practice clitorial circumcision and claim that it not only affords a preventive means toward the infection of the various venereal diseases but that it also blunts sexual sensibility. The Hindoos performed this operation probably with a view of obviating vile lust and abnormal sexual desire in the female and in this way paving the path to stern virtue. Old Egypt is perhaps the land wherein circumcision was extensively practiced yet it was not compulsory. A circumcised man was a privileged one and perhaps we are not surprised to find it among the nobler castes, viz., the priests and to some extent in the soldiers. The two latter castes constituted what is known as the "Copts or Natives" of Egypt in contradistinction to the "Invaders or Shepherds," the lowest caste and probably immigrants, who fervently objected to circumcision. Any man desiring to become a priest for that purpose and wishing to enter the sacred school at Heliopolis had among other requirements to be cir-All officers of the army and those of the court of the Pharaones were circumcised. This rite in Egypt dates back as far as 3000-2500 B. C. If the patriarch Abraham, who lived at or about 2000 B. C., gained the knowledge of circumcision from the Orient or from Egypt is not known. One thing we are certain of is that Abraham was not the first man to practice circumcision although the first to introduce it among the Hebrews. "The covenant between Abraham and his invis-No condition but isolation and the sign of it. ible God had been simple. Circumcision had been imposed upon the first Hebrew." (J. R. Sheeley, Ecce. Homo pt. I. Ch. 4, p 41.) And this covenant was faithfully adhered by future generations until the emigration of Jacob to Egypt, where, owing to the more pastoral occupation of the children of Israel, their repulsion by the Copts, their yoke and bitter slavery under the Pharaones, this custom and covenant sunk into oblivion and became absolute. It was not until after the delivery of the Jews from the exile by Moses and the genius leadership of Joshua who urged, nay rigidly insisted, upon them to "Wipe off the shame of Egypt from them," that they finally with utmost contempt consented to be circumcised. The Hebrews in the ancient times exclusively used sharp stones, shells and a certain kind of hard wood; later however instruments made of iron, copper, steel and other metals were preferred. The Egyptians, as mentioned above, had a special instrument for this purpose. If I am not mistaken such an instrument is to be found in the Royal Museum of Archæology of Berlin and as some papyri indicate was solely used for The Egyptians attributed various prophylactic and circumcision. remedial powers to circumcision, notably the prevention and cure of leprosy and venereal diseases. Hippocrates advocates circumcision for epilepsy, infantile convulsions and manifold nervous disorders. Mental diseases are said by the same author to be successfully treated by por-

forming circumcision. This is in correspondence with modern theories-Furthermore incontinence and retention of urine in children have only abated after performing this operation. Various conditions of the glands, penis and prepuce as balanitis, ulcerations, etc., posthitis, phimosis and paraphimosis are best treated by circumcision. Chronic cases of urethritis and cystitis which otherwise obstinately resisted treatment are occasionally benefitted by a circumcision. I have seen masturbaters to stop their vile practice only after a circumcision. Maimonides, the celebrated Hebrew writer, philosopher and physician, declares that circumcision "diminishes sexual appetite" and may probably for that reason have been practiced among the ancient Egyptians and at present among the Hebrews That it to some extent diminishes sexual desire is a and Mohammedans. fact well corroborated and on that account somewhat explains why venereal diseases are so proportionately few among the Jews. concluding my article I would say that some christian sects, notably the "Jewish christians," among whom circumcision prevails, maintain that the Mosaic ritual was of perpetual and universal obligation, drew and separated himself fearing them which were of the circumcision." (Gal. II, 12.) It is not to be forgotten in connection with this subject that the festival of the circumcision of Jesus is observed on Jan. 1st. word about the circumcision in Oceanic and some of the Coral Islands of the Southern Indian Ocean. The savages in those islands are also in the habit of instituting a certain kind of circumcision in young males; it consists in amputating a portion of the scrotum and is performed during adolescence in the male children of the nobles and chiefs of tribes. this may prove an efficient means for the prevention of varicocele is a question to be considered In connection with circumcision I might touch somewhat on castration, which is sometimes practiced as a rite in lieu of circumcision but its use is rather restricted to individual The "Old Believers" in Russia, a sect of the Greek-Catholic church practiced it exclusively and consequently enjoin celibacy, hence the induction of ritual castration. Again castration is in vogue in the Orient in some instances, viz: the holders of large harems impose it upon the servants and guards of such institutions to undergo castration in order to obviate temptations and thus prevent divergence from virtue on the part of the Those unfortunates are termed "Eunuchs." Certain crimes, as rape and sodomy, were formerly punished in India and Persia about the 11th or 12th century by circumcision and amputation of the penis. Castration was also resorted to as a means of punishment for various transgressions and if I am not mistaken a member of the Michigan legislature has recently introduced a bill to the effect that individuals committing rape shall unvariably be castrated. The fallacy of such a proposition is obvious.

Before bidding adieu let me apologize to you for the brief and incomplete data furnished therein. Any additions to the latter would be regarded by the author with special favor. This short article has by no means exhausted every possible resource and much remains yet to be learned.

TREATMENT OF TAPEWORM BY USE OF MORPHINE INJECTED INTO THE PROTRUDING PART OF THE PARASITE.

BY J. W. KIME, M. D.,

Editor Iowa Medical Journal, Keokuk, Iowa.

The attempt at removal of tapeworm by any of the tænicides is followed by a large number of failures which, by the method which I have used in two recent cases, might be converted into successes.

It is a very common occurrence for the parasite under such circumstances to drop down into the lower part of the intestine and reattach itself with the sacrifice of a considerable portion of its caudal extremity. I have sometimes been able, by copious injections of water or saline solutions, to bring away the head of the worm, but far more frequently have I succeeded only in breaking off the worm.

Recently it occurred to me, while attempting to remove one of these pests, fifteen feet of which were visible and ten feet invisible, that I might take advantage of the latter portion by properly medicating the protruding part. I therefore, after tying a string moderately tight around the worm about three inches below the patient, injected above the string, directly into the substance of the worm, one-half grain of morphine; the protruding part was then severed with scissors just below the ligature, and the three or four inches remaining were passed up through the shpincters and left there about ten minutes.

A large injection of water was then given, and the upper portion of the worm passed entirely motionless and apparently dead.

Since reporting this case in the Iowa Medical Journal I have treated one other case the same way, and with the same results.

Most varieties of tapeworm have a pair of longitudinal vessels passing from one extremity to the other, through all the segments, and toxic substances injected into the body of the worm are taken up by them and reach every portion of the parasite.

The mistake is often made of simply prescribing some remedy with directions for the patient to use. Only a small percentage of successes can thus be expected.

The only proper method of treating tapeworm is about as follows:

The patient does not fast or have any preparatory treatment whatever, except that he eats no breakfast on the morning of the day of treatment. At about 9 A. M. he is given a dose of infusion of pomegranate, or what is far better, of tannate of pelletierine, with one or two drops of croton oil. The patient should be kept at rest, generally under the personal observation of the physician, for two or three hours, when movements of the bowels will most likely occur and the whole or part of the worm be passed. If only a part protrudes, then the hypodermic should be used as above described.—Medical Journal.

SOME OF THE COMMONER REFLEX SYMPTOMS FROM DISEASE OF THE RECTUM.

BY I. L WATKINS, M. D., Montgomery, Ala., in Medicine.

The subject of reflex symptoms is so little understood that any contribution on the subject may be regarded as speculative. That such phenomena exist is admitted by every one; and why they are, in this age of marvelous discoveries and wealth of knowledge, so little understood is beyond conception.

The most pronounced and annoying reflex symptoms are those due to disease of either the rectum or generative organs. These tissues are richly supplied with cerebrospinal and sympathetic nerves. Many conditions dependent on disease of these organs, heretofore regarded as reflex, are, in fact, not reflex at all, but due to anatomical relations. The migration of bacteria by continuity of tissue is well understood. The old idea that all infections were conveyed through the lymphatics is now known to be incorrect. In cancerous disease malignant growths are found in cellular tissue where no glands exist. The bacillus coli communis, whose natural habitation is the bowel, is known to infect the neighboring organs. The gonococcus not infrequently infects the mucous membrane of the These facts should not be overlooked when investigating the cause of a disease in a given organ.

That one who devotes most of his time to gynecological subjects should attempt to write on diseases of the rectum, at first seems inconsistent and in infringement on the field of the proctologist; in justification of this effort I shall attempt to make a report of some cases coming under my observation that belong to no small class of cases who consult gynecologists for relief of symptoms referred to the pelvic organs. On examination these organs are found perfectly healthy. The question might justly be asked, Why did we not turn these cases over to a rectal surgeon? The answer to this question will be found in the statement that no one can be successful as a gynecologist without at least some knowledge of the diseases of the neighboring organs. The character of there troubles makes it desirable for them to fall into as few hands as possible.

In directing attention to this subject it is not my purpose to discuss the more common pathological conditions of the rectum, but to cal! attention to a line of symptoms of the pelvic organs which to a less careful observer might prove very confusing. The question may be asked whether any trouble exists in the rectum. The answer is usually in the Notwithstanding the statement that there is nothing wrong with this organ, in cases of failure to find, on careful investigation of the other pelvic organs, a condition sufficient to account for the symptoms, the rectum should always be examined. We will very frequently be deterred from making this examination, and be unable to give a positive opinion, the patient insisting all the while that the trouble is in the uterus, ovaries or bladder. We may be able to elicit a history of a predisposition to dysentery and the passage at intervals of glairy mucus, which has been attributed to obstinate constipation. This condition may have existed for a few months, or perhaps for several years. The sphincter is abnormally contracted and very sensitive, which will render the examination

unsatisfactory, owing to the pain on passing the speculum. With the aid of a good light and the sphincter well dilated the condition to which I ask special attention will, in the majority of cases, be found. On either the front or back surface, or maybe both, will be found an area, varying in size from a 25-cent piece to a silver dollar, where no mucous membrane exists. It begins about the muco cutaneous junction and extends up the wall of the bowel. The base of this region is pale, with irregular edges, and the depth not more than the thickness of the mucous membrane. It exists frequently without any relation to a pile tumor or fissure. rule, more or less general proctitis may be found. Owing to the similarity of the mucous membrane and the base of this ulcer, in a bad light it is an easy matter to overlook it. Just what is the character of this ulcer I am unable to state, as I have not found them described in any of the works on disease of the rectum at my disposal. They are neither tuberculous nor syphilitic in character, as they rapidly yield to local treatment. When we remember how richly supplied these tissues are with sympathetic nerves, we readily see that the exposure of a small area of these nerves operating through the spinal nervous system may produce annoying symptoms. A bacteriological investigation might shed some light on the sub-This condition is most frequently found in people of sedentary habits, who do not earn their daily bread or attend to their bodily functions.

I will select three typical cases to report. It will be unnecessary for me to report more, since there is such striking similarity in them all.

Case 1.—In September, 1895, Miss W——, aged 22 years, from a neighboring village, applied to me with the following history: She began to menstruate at an early age, which was regular and not attended with pain. She had had the usual diseases of childhood, but no serious illness. Was rather stout, with fairly good color. While at school was never active, being unable to indulge in the usual games with other girls. Before graduating she began to miss her periods, and developed nervous symptoms, for which she was taken from school and put under treatment by the family physician. Failing to get relief by this measure, she was placed in a surgical institute, where she had electricity, massage and baths for several months. On the above date she appeared to me with a line of symptoms very much exaggerated and very confusing-pain in the back, left side, both legs, extending to the knees, with the sense of a heavy weight in the pelvic region while standing. She was classed as a typical neurotic subject. Examination revealed a uterus normal in size, with some cervicitis, and small, sensitive ovaries. After the usual preparation she was curetted and a small hemorrhoidal tumor removed. Some improvement followed, which might have been attributed to the rest in bed. She continued to suffer with insomnia and the passage of large quantities of mucus from the bowels. Owing to great sensitiveness I was unable to treat the rectum further except under ether, which was administered, and the sphincter dilated. At this time the ulceration described above was found well developed, and treatment was directed to its relief. The usual application of nitrate of silver with other antiseptics, and occasional cutting through the base of the ulcer, sufficed to improve all her symptoms.

Though not entirely relieved, she was advised to return to her home for the purpose of taking a rest from treatment, which she did. Feeling that she was quite well, she decided that she would spend the summar at Mount Eagle, from where she wrote me a letter stating that she was perfectly well. Soon after this she returned to her home and found herself growing rapidly worse. Being discouraged with her experience with me, she now applied to two distinguished members of the profession, one of whom advised a removal of her ovaries, which advice she declined to accept. She has never recovered, and now regards herself as an incurable invalid. In my opinion, had this woman's rectum been properly treated at an earlier date she might have been saved from all the suffering which she has endured.

Case 2.—Mrs. C.—, aged about 35 years, nullipara, entered my sanatorium in November, 1895, very anemic and a confirmed invalid. About five years before that time her ovaries had been removed by Dr. Batty for dysmenorrhea. She has never been well since that time, although she did not menstruate. Complained of severe pain in left side, weak back and indigestion. Had very much the appearance of a cancerous subject. On examination I found the generative organs in the condition usually produced by the operation which she had undergone. The vagina was patulous and the perineum was slightly lacerated. The uterus was displaced backward, and there was a fair crop of hemorrhoidal tumors. The perineum was repaired, the tumors removed, and an extensive ulceration on both anterior and posterior walls of the rectum was found. some weeks of persuasion and argument I succeeded in getting permission to treat the rectum. Immediately she began to improve, and was relieved from all of her symptoms. In my opinion, this is one of a large number of cases where the ovaries are removed and the patient left in as bad or worse condition than before the operation. We should be very positive that these organs are the cause of the suffering before we remove them.

Case 3.—Miss A--, aged 22 years, was referred to me in July, The family history was negative. Menstruation regular; had had no sickness except a slight attack of dysentery about a year previously. Since that time she had noticed some mucous discharge from the bowel. For several years she had been a great sufferer with pain in the lower part of the abdomen, and part of the time was unable to walk or stand. Recently she had vomited her meals immediately after taking them. This statement is doubtless untrue, since she was in very good flesh. This symptom was relieved by threats of severe treatment if she kept it up. As she had been sent to me to have her ovaries removed, I made a careful examination under ether, and was unable to find any disease of these organs. Although she stated she had no trouble with the rectum, I found two very large ulcers, to which I applied pure nitric acid, which relieved her in about three weeks. When discharged she was able to get about actively, though when she came she had to be carried from her carriage to her room.

I might relate many similar cases, but my object is only to put the regular practitioner on his guard before he advises a patient that the ovaries will have to be removed, and for that reason she must consult a specialist. It is never pleasant to have to disagree with the diagnosis of the family physician, but when he is so careless as to make the error alluded to in this paper humanity compels us to do so.—Medicine.

THE HUMAN FOOT.

The feet are the basis of posture and to a considerable extent of movement; they are both a foundation, bearing the weight of the body, and propulsive organs, assisting in shaping its attitudes and in moving it from place to place.

If the feet are weak, painful or deformed, the body is hindered not only in its movements but in its development, but if they possess their natural strength and elasticity, there is at least a basis for the proper develop-

ment of the limbs, trunk, and organs.

The human foot, having much rough work to do, is less highly specialized than the hand, less even than in some animals, where it has prehensile power, and serves not only for locomotion but as a sort of hand.

Some remnants of this prehensile power persist in the new born infant, whose toes are constantly spreading and closing, opening and shutting, and the movements of whose great toe suggest those of the thumb.

These movements may persist and become highly developed as in certain savages who do not clothe the feet, and in certain individuals, such as those who have no use of the hands, but in civilized man whose feet are confined from childhood all freedom of movement of the toes is prevented and they soon become helpless appendages, more or less deformed from restraint and compression.

As the foot loses its rudimentary prehensile powers, its intrinsic muscles, about as numerous as in the hand, waste away, and its sustaining,

steadying power, diminish.

Effect of wearing shoes.

It seems to be taken for granted by large numbers of people that more or less discomfort in the feet is inevitable. Like those born color-blind, they suppose that everyone is made that way. And it is a fact that practically every shoe-wearing foot is more or less imperfect in function, and deformed in shape. Shoe-wearing is not the only cause of foot weakness and distress, but it is such a common cause that it merits investigation in some detail.

In general, shoe-wearing, by preventing the adjustment of the foot to varying surfaces, and interfering with its propulsive function and with its circulation, hinders development and causes atrophy not only of the structures of the foot, but of the leg muscles in relation with it. The sustaining power of the foot suffers and, when it is unequal to the load imposed upon it, the foot gives way in its weakest parts. The longitudinal arch of the foot flattens down, the inner edge of the foot, which was not intended directly to sustain weight or to come in contact with

the ground, sinks down until it bears pressure, the foot turns and rolls outward, the bones are brought into abnormal relations, discomfort, pain, stiffness, disability result. Thus weak-foot and flat-foot may result from imperfect use and development of the feet, one cause of which is shoewearing, another cause is the hard, even surfaces of city sidewalks, with which the feet are constantly hammered and always in nearly the same way, instead of the varied motions required by yielding and uneven ground. The inner side of the foot is the weaker side, it yields, the arch sinks, the feet turn out, the calves atrophy, strain is put on the inner sides of the knees with a tendency to knock-knee, and the posture and muscular action of the whole body receives a vicious bias. Weak feet are one cause of knock-knees.

So much for the general effect of confinement and monotony of action. Shape of the normal foot.

The outline of the naked normal foot is wedge-shaped, with the apex at the heel. The base of the wedge is not straight, but slopes toward the small toe. The inner edge of the foot is practically a straight line from great toe to heel. The toes at rest lie straight like fingers, radiating and somewhat separated like the sticks of a fan. The foot is well arched on the inner border, and bears weight on the heel, outer edge and ball. It is also arched transversely across the ball of the foot, though this is less apparent. With relation to each other the feet should lie nearly parallel, at least in walking. When weight is borne, the arch of the foot spreads somewhat, recovering when the weight is removed.

Special deformities and painful affections due to shoes.

It is obvious that most shoes interfere with some of these characteristics of the normal foot.

The toes are cramped, compressed and curled up from insufficient room in length, breadth, or both. Pointed or short shoes are a common cause of hallux valgus, deformed great toe, and of bunions, enlarged and often painful great toe joints. Insufficient breadth curls the small toe and often causes a corn on its dorsum. All the toes are crowded together so that they lose their natural outline, and become shaped by reciprocal pressure. Corns or calluses are formed over the parts most exposed to pressure, and pressure is one cause of ingrown to-nail. There are other painful affections more or less dependent upon improper foot-gear. One of these, Morton's toe or metatarsalgia, is due to pressure on a small nerve usually under the fourth toe; it sometimes causes pains radiating up the leg.

When the great toe is forced inward and thrown out of action by a pointed shoe, a powerful support to the inner edge of the foot is removed, and the sinking of the arch, and outward turning and rolling of the foot, ending in flat-foot, is rendered easier.

The net result of average shoe-wearing, even when gross deformities are not apparent, is a weakening of the foot and loss of elasticity. The tendency is to use the foot more as a prop and less as a propeller; and the action of the legs, indeed, the attitude and movement of the whole body are profoundly affected. High heels, happily less fashionable than formerly, do this directly.

Points of a good shoe.

The principal point should be behind rather than in front. That is, the heel-cup should be narrow, snugly holding the heel in its place. The posterior part of the foot does not expand in walking, and has no appendages; it should be held in its snugly-fitting heel-cup by a well laced and not too roomy upper. If the ankle and instep leather is too large, the foot slides, forward and the shoe becomes, in effect, too short.

Laced shoes are better than buttoned, since if correctly fitted the slack can always be taken up. The outside heel should be low and broad. The shoe should be nearly straight on the inner edge, and broad across the ball. It should be long enough and to spare, not too pointed, and the tip on a line with the inner edge, not with the middle of the foot. The leather over the toes should be boxed up. The shoe should not be curved up in front, and the sole and shank should not be too thin. Ankle shoes are better than low shoes, as a rule, since they hold the foot more securely in place. Their drawback is imperfect ventilation, a bane of all shoes. Too big a shoe is almost as bad as too small a one. Commercial shoes are on the average of much better shape at present than a few years ago, and are on the whole improving; they are usually too tight in front and too large behind. The so-called natural, or waukenphast, comes nearer than the old-fashioned shape to what is required.

Special shoes.

The shoe is not an orthopedic instrument, and the effort of dealers to treat foot deformities by specially constructed shoes are usually futile and sometimes harmful. The commonest commercial modification is the "stiff-ankled" shoes for weak ankles, for which there seems to be a large and constant demand on the part of anxious parents. The writer sees them used for almost every conceivable affection below the waist-line. They are, in his opinion, never of the slightest benefit.

In weak feet or weak ankles, the inner ankle bone becomes prominent and the foot points outward. The patient should walk toeing in, also on the balls of feet, also rise on the balls of the feet with the heels turned outward. These and other exercises should be done in bare feet or with stockings only. It is frequently a good plan to raise the inner edge of the shoe a quarter of an inch to help throw the weight on the outer edge of the foot and to turn the foot inward.

Toeing out and toeing in.

Toeing out is the position of weakness; toeing in the position of strength. That is, within limits, the elasticity and resistance of the foot and muscular play of the leg is increased by toeing in. Good runners toe in. Toeing out tends to produce knock-knees, toeing in bow-legs, a less serious affection. Per contra knock-knees tend to produce eversion, and bow-legs inversion of the feet. When the feet are weak, however, with or without knock-knees, the natural tendency to toeing out may be voluntarily or unconsciously resisted and the child walk pigeon-toed as a protection to its weak feet or knees. Here is seen the futility of the shoemakers' attempts at the correction of this condition, since it may be

a really favorable position for the feet. An expert examination of the lower extremities will alone decide. Unless very decided, or due to bowlegs, toeing in had best be left alone. Normal children and children with a tendency to weak feet should be encouraged to run on uneven ground, and taught to toe straight ahead or slightly inward. A romp night and morning in bare feet is a help, and the babies should be without footcovering until they walk. At the seashore or in the country going barefoot is a wholesome exercise.

The esthetic side of it.

Enough has probably been said to convince the reader that without well-shapen, strong and elastic feet, a graceful carriage and locomotor endurance are impossible. It would seem to be unnecessary to assert that weak and deformed feet are devoid of beauty, and that the natural shape and movements of the feet are more attractive than any that can be artificially imparted to them. Leaving this one side, however, it must be conceded that grace and endurance can only be attained by a reasonable care of the natural shape and powers of the feet.

Practical value of serviceable feet.

It would be interesting to compute the economic loss to a community through preventable weakness and painful affections of the feet.

Take a class of individuals like trained nurses, whose ability to perform their duties lies in having feet that will do their work without complaining; how many amongst them lose days and weeks every year from corns, bunions, or flat and painful feet? Certainly a great many. This was recognized as a practical matter by one of the Boston training schools, and Dr. R. W. Lovett, a skilled orthopedic surgeon, was asked to take charge of the feet of all the nurses in the training school. He consented only on the condition that every nurse should follow his directions absolutely in regard to the kind of shoes she should wear. As a result, cases of foot disability and inability to work for longer or shorter periods, which previously had been common, were reduced to practically none the first year this plan was adopted.

Policemen are often laid up from painful affections of the feet, and an eastern city is said to find it advantageous to pay a skilled orthopedic surgeon his full office fees for caring for the feet of disabled officers. Flat feet and other disabling affections of the feet are very common in bakers, waiters, servants, and all those who are much on their feet, and at the same time habitually wearing bad shoes. Other causes of these affections are increased tenuity or diminished resistance of the tissues from some constitutional cause, such as rickets, or the paralysis of the muscles. In a word, any thing or things which bring about a disproportion between the weight and the resisting power of the structures bearing it may produce weak, painful and deformed feet, and particularly flat foot.

The gymnastic and military foot.

We owe the pernicious idea of the desirability of toeing out to the dancing-master and the drill-sergeant, with the able co-operation of mothers and teachers. It may well be that for temporary and special purposes this position has its use. It affords lateral stability to a file of men

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ols a the be standing at attention, but we are of the opinion that a smaller angle than is at present advised will be found advantageous to most military and gymnastic purposes, especially in marching. It should not be forgotten that gymnastic drill has been largely influenced by military ideals.

The integrity, competence and endurance of the soldier's foot is of fundamental importance, and in order to get protection, elasticity, and muscular control, the foot should be well pointed forward in marching.

Too much attention cannot be bestowed on shoes in military and gymnastic work.

The foot in art.

One har lly realizes the defects and imperfections of the civilized human body until one seeks a perfect model for artistic portrayal, as do painters and sculptors. For, while the artist is not slavishly bound to his model, but generalizes and idealizes, yet he is strongly influenced by the qualities he finds constantly repeated. It is difficult in modern sculpture and painting to find an anatomically correct foot, the deformities impressed upon the foot by shoe-wearing are reproduced in works of art, and particularly the deformed great toe, marring the perfect line of the inner border of the foot.

The sandal did not produce this deformity, consequently we find the feet of Murillo's sandaled monks, and of the ancient masterpieces of sculpture, freer from this defect.

The statute of Melager, from the early Roman period, and now in the Vatican, has been chosen for reproduction this month mainly because it correctly exhibits the main features of undeformed feet.

To study the natural foot, however, we must observe the feet of bare-footed infants and savages.

Woman as she is shod.

"I need not comment on the evil effect of the ordinary woman's boot. If one desired to invent a boot calculated to throw the foot over to its inner side and weaken the muscular support, he would select a boot with a pointed toe, having the point near the middle of the foot; the sole should be narrower than the boot in front; the shank should be weak and cut away inside, and the forward part should not be adducted upon the posterior part. Such a boot crowds the great toe outward and removes the buttress which keeps the inner border of the foot from rolling over. It crowds together the ends of the metatarsals and in general favors both coersion and abduction. The earlier in life such a boot is worn, the greater the harm."—Dr. Robert W. Lovett, in New York Medical Journal.

MECHANICS OF THE FOOT.

In estimating the relative ability of a foot from the mechanical standpoint, it will be evident that valgus must be a source of weakness because the weight of the body is improperly distributed on the foot, that abduction is a source of weakness because the strain of the calf muscles tends to bend the foot laterally, and that a low arch may be a source of weakness because the lax ligaments do not hold the joints properly. These three elements combined in varying degree make up the typical flat-foot deformity, but they are by no means always combined. Valgus may accompany an exaggerated arch, and valgus with abduction is the condition often found in the so-called sprain of the ankle.

Restriction of motion and improper attitudes, whether voluntary, the result of habit or involuntary, because of pain or weakness or permanent change in any of the structures that make up the foot, are sources of weakness because they prevent the proper alternation of attitudes. All the elements of weakness may be found in developed flat-foot, and they must be overcome before it can be cured. Any of the elements of weakness may cause symptoms of disability and ultimately lead to deformity.

It must be very evident that the foot may be abused and deformed and yet be able to perform its work; the predisposing causes of weakness are present, yet because little is required of the mechanism it is still efficient. It needs, however, but temporary weakness or slight injury or over-work to give the impulse, and the foot breaks down. Thus symptoms of the weak or flat foot may develop at any age, in the robust as well as in the anemic individual, and it is thus explained why the very evident weak and flat foot of childhood often causes no symptons until the poriod of rapid growth and increased weight of adolescence, or later when the life occupation is begun.

One of the most frequent improper postures is that of exaggerated eversion of the feet, which is not only an ungraceful attitude, but a direct cause of weakness. The opposite attitude of inversion of the feet, the so-called "pigeon-toed" walk, is most offensive to relatives and friends, and it is for the correction of the attitude that the child is brought for treatment. This attitude is in many instances a sign of the weak foot, for on examination the bulging an the inner side, the inversion of the leg in its relation to the foot, and the flattened arch, show very plainly that it is the foot and not the attitude that requires treatment, and that the attitude in this class of cases is really a safeguard against increasing deformity, which will correct itself when its cause is removed. Particular emphasis is laid upon this point, which is very generally overlooked because the routine treatment of pigeon-toes in these cases might be the cause of direct harm.—Dr. Royal Whitman, in New York Medical Journal.

ANAEMIA AND ITS TREATMENT.

BY DEERING J. ROBERTS M.D., NASHVILLE, TENN.

There are few practitioners of any experience who have not from time to time had to contend with anæmia in some of its forms, either as a primary or essential anæmia chlorosis, etc.; or a secondary or symptomatic. This pathological condition is characterized by a diminution or deterioration in the quantity or quality of the blood or one or more of its constituents, either as a result of no known pathological condition of

other tissues or organs than the blood itself; or as a result of (a) hemorrhage; (b) inanition or want of assimilation; (c) excessive albuminuria, prolonged suppuration, long-continued lactation, chronic dysentery, etc.; or (d) toxic agents, as the absorption of lead, arsenic, mercury, and phosphorus, and the toxic influence of acute and chronic infectious diseases, as typhoid and yellow fever, diphtheria, acute inflammatory rheumatism, chronic malaria, tuberculosis and syphilis. The general practioner, the surgeon, the obstetrician, the gynæcologist, and other specialists, all will continue to meet with it from day to day, and it will often prove, unless promptly and efficiently met and combated, "the last straw that breaks the camel's back." After other serious involvements of regions or viscera have been safely tided over, and the original danger is well and satisfactorily out of the way, anæmia may still bar our progress in establishing a successful restoration to health.

The pallor of skin and mucosa as indicated by the general surface and livid lips, the languor, debility, and extreme fatigue under the slightest exertion, occasional palpitations, dyspnæa, headaches, anorexia or possibly perverted and unnatural appetite, the visible undulating pulsations of the carotids, the pulsation of the peripheral veins, the occasional heart murmurs, the "bruit de diable" or venous hum over the large cervical veins, both muscular and mental weakness, loss of or impaired nerve function, neuralgia, coolness of surface, the weak, thready or compressible pulse, together with constipation or occasionally its opposite, make up, as a whole or in part, a clinical picture that is usually readily recognized by any careful observer.

Should the diagnosis, however, be in any doubt whatever, a proper laboratory examination will show a diminution of (1) the total quantity of blood in the body oligamia; (2) of the red corpuscles, oligocythamia; (3) of the hamoglobin, oligochromamia; (4) of the albumen, anhydramia; (5) or changes in the shape of the red corpuscles, poikilocytosis; (6) or in their size, micro-, macro-, or megalocytosis. It is rare, however, that so thorough an examination is necessary; and many of us, especially those engaged in active practice, have neither time nor opportunity for such an investigation, and rely on the general characteristic features presented

together with the previous clinical history.

In the treatment of this condition iron in some form has long been a recognized essential remedy, and a most excellent one it has proved on many occasions; yet sometimes it brings only disappointment, either from the inability to get the patient to take it in sufficient quantity, or from failure to secure its entrance into the circulation by the absorbents, or from bringing about other symptoms that add to the discomfort and danger impending, as irritability of the bowels, diarrhæa or its opposite, or from its astringent effect on the mucous lining of the alimentary tract, interfering with the proper digestion and assimilation of the limited food supply that is tolerated by the patient.

More than half a century ago M. BurinBuboisson demonstrated by chemical analysis the recognized fact that the red corpuscles of the blood contain about one-twentieth as much manganese as iron. Nature never doing anything uselessly or unnecessarily, we can but recognize it as one

of the essential constituents of the blood; and when its preparation is lessened by hemorrhages and other conditions that impair the blood, its restoration through natural channels is but slow and uncertain, so that it is quite a natural suggestion to take steps to secure its re-establishment in proper proportion. Soon after its demonstration as existing in the blood, M. Hannon and others used it with satisfactory success in chlorosis, syphilis, scrofula, and other similar conditions. Kugler, in 1838, noticing that individuals employed in bleaching establishments where chlorine was largely used, and in those who handle large quantities of the salts or oxides of manganese, were free from diseases of the skin, bones, and glands, made a successful trial of it in scrofula. The various salts or oxides of manganese used from time to time being deficient in stability or difficult of assimilation, its use has not been altogether satisfactory until quite recently.

A little over a year ago I received from Messrs. M. J. Breitenbach Co., of New York, a preparation new to me, bearing the name of "Pepto-Mangan, Gude," prepared by Dr. Gude, Chemist, of Leipsic, Germany. The claim being made that it was a combination of iron an manganese as true peptonates, having decided advantages over the preparations of iron, even the albuminate, in both permanency and ease of assimilation. It is clear, of a rich sherry-wine color, neutral in reaction, free from astringency, and of a pleasant aromatic taste. It is also claimed for this preparation that "it is a powerful blood-forming agent; a genuine hæmoglobinogenetic; feeding the red corpuscles with organic iron and manganese, which are quickly and completely absorbed in cases of anæmia from any cause, such as chlorosis, amenorrhæa, dysmenorrhæa, chorea, Bright's disease, etc."

Dr. H. P. Loomis, of New York, in a paper read before the Section of General Medicine of the New York Academy of Medicine, speaks of it most favorably and reports a series of eight cases (Bellevue Hospital) in which anæmia had resulted from various causes and the number of red corpuscles had been markedly reduced from more than twenty-five to near fifty per cent, as demonstrated by careful count by proper laboratory apparatus, and that under the use of "Pepto-Mangan, Gude" in six to eight weeks they were restored to the normal or increased beyond it. He concludes the paper with the following:

"In most cases the Pepto-Mangan (Gude) had no constipating effect. Of the eight cases of which accurate notes were kept, all showed a marked improvement both in the increase in the amount of hæmoglobin as well as increase in the number of red blood corpuscles. The average increase of the hæmoglobin was 2.2 per cent and of the red blood corpuscles 1,258,000."

Dr. Hugo Summa, of St. Louis, in an article in the New York Medical Journal, reports having treated thirty-four cases with Pepto-Mangan, Gude, partly cases of chlorosis and partly cases of secondary anæmia, occurring chiefly after subacute malarial and typhoid fever. Two cases of chlorosis and four of secondary anæmia he gives in abstract, in all of whom there was great improvement or complete recovery.

He says: "In conclusion I should like to state that similar good results were obtained in the remaining twenty-eight cases. It is especially worth while mentioning that no bad after-effects could be detected. In this connection I call special attention to the absence of constipation that could be traced back to the use of this preparation. The dose varied from a teaspoonful to a tablespoonful three times a day an hour after meals, either in sherry or milk, according to the individual case, especially according to the condition of the digestive organs."

Dr. Chas. O'Donovan, of Baltimore, Md., in *The Medical News* of November 27th ult. and in April, 1889, speaks very favorably of the use of manganese in certain cases of dysmenorrhea. The articles are too long for even brief abstract, yet it is a well-known fact that, as a rule, dysmenorrhea, when not due to structural lesions of the uterus, or displacements, stenosis, etc., can with almost unerring certainty be traced to be dependent on an altered, depraved or deficient condition of the blood.

A CASE OF SEPTICEMIA POST-ABORTUM.

BY ROBERT H. LAWRENCE, M.D., CHICAGO, ILL,

Mrs. D. A., age 23. Married 5 months. Aborted October 1. Was called to see her at noon, October 5. Found patient in bed, great difficulty in breathing, with pain in abdomen which was very tympanitic and sore, foul odor—very noticeable during examination. Gave history of previous good health, but continuous flow of blood from vagina for 5 days. On examination found clots of retained placenta. Temperature 103°. Pulse 122. Used curette and gave carbolized douche. 8 p.m.: Temperature 104°. Pulse 150 Gave stimulants and intra-uterine douche Borolyptol 3ii, and vaginal douche carbolized water. Consultation with Dr. H. P. Nelson. Prognosis very doubtful. Diaphoretics and stimulants ordered every half-hour.

Same day, 11.30 p.m. Temperature 101.6°; pulse 126. Vomited freely, mild perspiration, light sleep.

October 6, 5 a.m.: Temperature 104.4°; pulse rapid and weak, skin dry—ordered diaphoretics every 15 minutes for 4 hours, and stimulants every hour. Surrounded with hot-water bottles.

2.30 p.m.: Temperature 164°. Diaphoretics every 15 minutes Stimulants every half-hour. Intra-uterine douche Borolyptol 3ii. 6 p.m. Temperature 103°; pulse 130.

Consultation with Dr. A. McDiarmid. Curetted again under full anesthesia and used 1.3000-bichloride solution as douche—this procedure was followed by a severe chill, abdominal tenderness and involuntary bowel evacuations. At 8.30, temperature had risen to 105.5°; pulse 140.

October 7, 10 a.m.: Temperature 100.2°; pulse 108. During the day temperature rose gradually, and at 6 p.m. was 104.4°. Then gave intrauterine douche bichloride 1.4000, which was followed, as before, by very severe chill, abdominal pain and involuntary bowel movements; at 9 p.m., temperature had risen to 106.4°, pulse 150, respiration 36; patient very restless.

October 8, 1 a.m.: Temperature 102.6°; pulse 120. Stimulants and diaphoretic continued, but hot-water bottles removed. Temperature at 2.30 p.m. had dropped to 101°. Intra-uterine douche Borolyptol 3ii. Vaginal douche Borolyptol solution. After this temperature continued below 100° until October 9, at 11 a.m., when it rose to 102.8°. Borolyptol douche repeated, several large clots washed away, no pain, no chills as after bichloride, but a rather restless night. Temperature continued low until noon, when Borolyptol intra-uterine douche again repeated, after which patient slept for 3 hours.

October 10, 10 a.m.: Temperature 100.2°. Borolyptol žii intrauterine douche and a similar douche at 10 p.m. These douches were repeated twice a day until October 15, during which time temperature did not rise above 100°, discharge gradually decreased, and my attendance ceased October 21, when patient had fully recovered.

I am very much pleased with the action of Borolyptol in this case as compared with mercuric bichloride—no pain, chills. or rise of temperature followed its use, and its action was in every way superior to that of the sublimate.—American Gynecological and Obsterical Journal.

BUBONIC PLAGUE IN 1141 B.C.

BY FRANK TIDSWELL, M.B, CH. M. SYD., D.P.H. CAMB., AND JAMES ADAM DICK, B.A SYD., M.D., C.M. EDIN., JOINT HON. SECS. OF THE MEDICAL SECTION OF THE ROYAL SOCIETY OF NEW SOUTH WALES.

In a few of the many articles on plague which had recently appeared in the medical press, there has been reference to certain passages in Holy Writ which contain a description of what has been regarded as an epidemic of bubonic plague. Some three years ago we collected notes concerning the history of plague, and, inter alia, some upon the passages in question. For various reasons the notes were not published at the time they were written, but we now venture to submit them for your consideration. But before proceeding to discuss the passages themselves, we would call attention to such characteristics of plague as seem to have bearing on their interpretation.

Bubonic plague is a disease which has been known and dreaded for many centures on account of its tendency to occur in widespread epidemics causing immense loss of life. Usually these epidemics have appeared quite suddenly, spread like wildfire, killed thousands of men and lower animals, and after a few years disappeared again. But although attracting special attention only at the times of its epidemic prevalence, the disease does not die out altogether in the intervals. It merely becomes restricted in its incidence to certain areas which constitute its endemic seats or centres, and within which it is constantly in existence. At the present time there appears to be five such centres; one in the north of Africa in the Bengazi district, one in the Azir district of Arabia, one in the mountains of Khurdistan in Persia, one in the Himalayas in India, and one in the Yunnan district of China.\(^1\) All the more recent epidemics have been traced to one or other of these centres; the most recent, that

which appeared in China in 1894, and is still prevalent in India, and has spread to Egypt and Portugal and other places, is said to have had its source in the Yunnan centre, where plague is known to have recurred every year since 1860.²

This last epidemic in India has furnished the opportunity for the study of the disease by modern methods of research. As all the world knows, the specific microbe has been discovered, a method of protective inoculation devised, and two different curative serums prepared. ther, the disease has been found to have at least three clinical varieties septicæmic, pulmonary, and bubonic, which, however, are usually more or less combined. The general tenor of the reports is to the effect that plague appears as a serious disease, characterised at times by very rapid prostration, collapse, coma, and death within 24 hours of the onset:3 at others enduring longer, in which case the classical buboes are apt to The buboes are usually to be found in the groins, but may occur in the armpits, along the neck, and elsewhere. The other striking feature of the disease is hæmorrhage, which may take place from all the orifices of the body-nose, mouth, bowel and bladder, or beneath the skin, or internally.4 The epidemic fatality is excessive, from 50 to 90 per cent. of attacks proving fatal 5

Epizootics on cattle, sheep, mice and rats, precedent to, or coincident with, the outbreak of the disease in man, are recorded in many of the older reports. often under the designation of "murrain." Recent accounts contain the same statements. Observations made during the present cpidemic in India have shewn that the disease in rats is due to the same cause as in man, viz., infection with bacillus pestis bubonicus of Kitasato.

Briefly, then, plague presents itself as a very severe disease, more or less sudden in onset, attacking both men and lower animals, having a high fatality, and in man specially characterised by bubonic swellings and hæmorrhages.

Now these are the symptoms which have been associated with plague from time immemorial. In comparing the features of the present epidemic with those described by the earliest writers, one cannot fail to be struck by the remarkable fixity of type displayed by plague throughout past ages. The definition of plague given in the last edition of Quain's Dictionary of Medicine published in 1894, refers to it as a "specific fever, attended by bubo of the inguinal glands, and occasionally by carbuncle.' A description written in 280 B.C., refers to it as "pestilentes bubones, maxime lethales et acuti."8 Intervening between these two, there are a whole series of accounts in which there is always the same record of a serious epidemic disease, with buboes and sometimes hæmorrhages. writings of Defoe, 9 Sydenham 10 and Thomas Lodge, 11 have made us familiar with the disease as it appeared in the 17th century. From the 14th century come the numerous records of the terrible "Black Death," which is said to have killed 25 millions of people,12 and of which Giovanni Boccaccio has left us so excellent a description in his introduction to the Decameron. From the sixth century we have many accounts of the epidemic which overran the Roman Empire in Justinian's time,13 and which is said to have "depopulated towns, turned the country into desert, and made the habitations of men to become the haunts of wild beasts." The frequent use of such terms as "pestis inguinaria," "glandularia," "clades inguinaria," "pestis bubonicus," in the chronicles of the period, sufficiently indicate the nature of the disease. This sixth century epidemic appears to mark the first visitation of the disease to Europe, but plague was known to exist in Egypt long before this time. Through the writings of Oribasius, physician to the Emperor Julian, there has come down to us a description of plague by Rufus of Ephesus, based on observations made by two physicians, Dioscorides and Posiedonos, who lived during the first century A.D. Rufus also mentions that the disease was well known to the contemporaries of Dionysius, as existent in Egypt, Lybia, and Syria in their times, the third century B.C. 15

According to Hirsch the distinguished epidemiologist, there are no certain references to plague in earlier medical or historical writings. He considers the mention of buboes by Hippocrates as too indefinite to merit reliance. It may be taken, therefore, that the authentic record of plague has not been traced back beyond 300 years before the time of Christ.

The passages in the Scripture, mentioned at the outset of this paper, appear to signalise a still earlier epidemic. They occur in the First Book of Samuel (ch. iv. to vi.), and narrate the defeat of the Israelities and the capture of the Ark of the Covenant by the Philistines at Ebenezer in about the year 1141 B.C., and they tell of the events that occurred subsequent to the arrival of the Ark in Philistia. The Ark was first taken to Ashdod, and to its presence in that city was attributed the severe illness that broke out amongst the people. The hand of the Lord was heavy upon them of Ashdod, and He destroyed them and smote them with emerods even Ashdod and the coasts thereof" (ch. v., 6). Terrified by this disaster the people of Ashdod sent the Ark to Gath, and here also the disease appeared. "The hand of the Lord was against the city with a very great destruction and He smote the men of the city, both great and small, and they had emerods in their secret parts" (v. 9). The Ark seems to have been afterwards carried from place to place until it finally reached Ekron and here again we are told: "There was a deadly destruction throughout all the city, . . . and the men that died not were smitten with the emerods, and the cry of the city went up to heaven" (ch. v., 11, 12). After seven months' experience of "destruction" and "emerods," the Philistines decided to send away the Ark, to the presence of which amongst them they attributed their illness. Accordingly the services of "priests" and "diviners" were requisitioned to decide as to the best means of restoring the Ark to the Israelites. They advised that, in addition to the Ark, a trespass offering should be sent, to consist of "images of your emerods and of your mice that mar the land." This advice was followed and the Ark, together with the images, went back to Israel on a new cart drawn by two milch kine. The Philistines accompanied the Ark on its journey as far as the borders of Bethshemish, where it arrived at the time when "they of Bethshemish were reaping their wheat harvest" (ch. vi., 13). The Israelities took down the Ark and the coffer, and "clave the wood of the cart and offered the kine as a burnt offering unto the Lord" (ch. vi., 14). Amongst the people of

Bethshemish there followed a severe disease of which many died, but no particulars of its nature are given. In response to a message men came from the neighbouring city of Kirjath Jearim, and conveyed the Ark to the house of one Abinadab: where it was kept under special guardianship

for twenty years.

The accounts of these events in the LXX (Septuagint), and in the authorized and revised versions are practically identical, but in the revised version the word "tumour" is used instead of "emerods," and a marginal note adds "or plague boils, as read by the Jews emerods." Josephus¹6 refers to the epidemic amongst the Philistines as "a very destructive disease," "a sore distemper that brought death upon them suddenly," for the people "died of dysentry and flux," and before death "brought up their entrails and vomited up what they had eaten and what was entirely corrupted by the disease." Thomas Lodge in his translation of Josephus, says, "the people being suddenly taken with this flix died in great torment, and some of them vomited up their bowels being corrupted and corroded with the disease." Both translations refer to the mice as destroying the crops, and to the images sent with the Ark to Bethshemish.

The medical evidence furnished by these accounts indicates that the Philistines suffered from an outbreak of epidemic disease. This disease was of sudden onset and marked severity, for it "smote" men with "a very great destruction." It was of wide and rapid spread, for in seven months (four according to Josephus) it became so disseminated as to create public alarm. A special assembly of priests and diviners was convened to deal with it, and the Philistines were induced to part with a war trophy—the Ark—on which they must have set a very high value. The physical symptoms, (i.) emerods in secret parts, (ii.) vomiting of foul

material, and (iii.) dysentery or flux, need some discussion.

(i.) The word "emerod" has usually been taken to mean hæmorrhoids that is piles, but this has been contested. It is to be noted that the original connotation of the Greek word is not "piles" but "a flow of blood," just, indeed, what Josephus may be supposed to mean by "dysentery or flux." It is significant that Josephus makes no mention of emerods but only of dysentery, that is, he gives the word its correct Nevertheless, emerods must mean tumors or Greek interpretation. swellings, since the Philistines were able to "make images of their emerods." Dr. William Smith states the word has affinities with Hebrew roots signifying anus or nates (secret parts), and in his discussion of the affliction of the Philistines he comes to the conclusion that "some morbid swelling seems to be the most probable nature of the disease." In default of any better explanation he appears to have accepted the conjecture that "hæmorrhoidal tumours" are meant. He mentions that Wundebar refers to a bloodless kind of emerod distinguished by the Talmudists as very dangerous, and this kind he (Wundebar) supposed to be referred to in the description of the disease in the First Book of Samuel. But the fact is the word "emerod" is exactly comparable to our own word "tumor" in that it has no exact significance. It has already been mentioned that the revised version has tumor or plague boil instead of emerod. significant that in India a local name for the plague is the boil.19 The

Rev. W. G. Maconochie, M. A.,20 informs us that the Hebrew word occuring in the description in Samuel is "Ophel," which originally meant a hillock or swelling, but has acquired a wider sense, and has amongst others been used to designate hernia. Consequently it might well have been applied to bubonic swelling in the groin, which resembles hernia in appearance. Prof. George Adam Smith, D.D., of Glasgow21, would also translate as swellings or boils. Professor Cosh²² writes: The Hebrew words used to designate the disease are ophel and its plural form ŏphālîm. In the singular ophel means something swollen; in the plural it is used as the designation of the disease in question (I. Sam., v., 6, 9, 12; vi., 4-6; Deut. xxviii., 27), and is understood to denote a swelling of some sort, a tumor or boil or tumors or boils. The remarks of Dr. William Smith concerning the affinities of the word with others signifying nates, suggest the site of the swellings. The "secret parts" were probably the nates or groins, the commonest sites for plague buboes. Referring to the incident Professor H. P. Smith says: "We can hardly go astray in seeing in it a description of the bubonic plague" (Intern. Com. on Sam., p. 40), an opinion which is shared by Professor Kirkpatrick, of Cambridge.23 From these considerations we think it may fairly be inferred that the "emerods" were really the glandular buboes of plague.

(ii.) The vomiting of "corrupted or corroded matter" denotes hæmatemesis. The vomit of plague contains altered blood ("black vomit"), and is said to have an extremely foul odour, so that it might justly be referred to as "corrupted matter," this expression being in common use amongst older writers to indicate hæmatemesis.

(iii.) By dysentery or flux is meant the passage of blood by the bowels. The description informs us, therefore, that hæmorrhage occurred both per os and per anum, a condition of affairs characteristic of plague

A s'ill further point in favour of plague is the season of the year at which the epidemic occurred. This is fixed by the mention of the arrival of the Ark at Bethshemish at the time of the wheat harvest, which in Palestine is long, and in Philistia is from April to June. The disease had prevailed amongst the Philistines for the previous six or seven months, that is from November or December till May or June. The plague season in Egypt, Syria and Asia Minor generally, is from November to June or July. Consequently the epidemic in question was incident on the Philistines at the time of the regular plague season.

An interesting point is the mention of mice in relation to the epidemic. There is only one such reference, viz., that which occurs suddenly and unexpectedly in connection with the images to be sent with the Ark. The expression is "mice that mar the land" ("earth," as Principal Kinross²⁶ would also translate), and it has usually been assumed that this indicates the destruction of crops, fruit, etc., by mice in large numbers. We know that mice can so destroy crops, but it has been questioned whether this is what is meant by the reference. Professor Cosh²² writes: With reference to the 'mice,' the word ('ak-1ere) etymologically denotes 'a burrowing animal.' In the description given of the plague itself in the Hebrew Bible no mention is made of mice. It is only when we come to the question as to the offering to be made in

expiation of the wrong done to Jehovah by the detention of the Ark that the word mice occurs. The offering prescribed was five golden ophalim and five golden 'mice.' If the Hebrew represent the correct form of the text, then the inference is that there was only one plague, viz.. that of the ophalim, and that there was a double offering, one (the mice) as the general emblem of a pestilence destroying the land, and the other (the ŏphālîm) as the representation of the particular form in which this particular pestilence had manifested itself. This is the opinion of Wellhausen, and is favoured by Driver and H. P. Smith. In the description given of the plague in the LXX. the mention of mice in vi., 4, is preceded by two notices describing a plague of mice in the country (v., 6, vi., 1), and similarly in vi., 4, 5, in the LXX. separate mention is made of the golden öphälim and the golden mice. But some eminent scholars think that the additions of the LXX. are interpolations of a later hand. There is nothing in the terms used to indicate that 'their land' meant the 'country' as distinguished from the 'city.' Professor Kirkpatrick also suggests that the mention of mice is merely symbolic of the destructive disease attacking the Philistines, since the mouse was the Egyptian symbol of destruction. But he admits the probability that there may have been a destruction of crops by mice. May it not be that the mice did not "mar the land" by destroying crops, but by their dead bodies and attendant putrefaction; that they did not constitute a plague, but were killed by one in numbers such as to excite comment? significance of this comment not being understood by the earlier scribes and translators was wrongly interpreted, and the mistake handed down The now well-known association of great through subsequent ages. fatality amongst rats and mice in plague epidemics suggests this idea as a feasible one. The association of images of the mice with images of the diseased parts in men induces the inference that they were fellow sufferers; and so golden images were made for both after the manner that in subsequent times the Greeks made "anathemata" or "donaria" 28.29 in similar national or individual extremeties and deliverances. the idea of destruction of crops there is the fact that there was a harvest to reap in Bethshemish, situated a comparatively short distance off, no for it is scarcely likey that had the crops in Philistia been destroyed by mice those of the adjoining Bethshemishites would have escaped. we do not wish to press the point of the significance of the mice, it has only been mentioned as a matter of interest in relation to the subject.

On the evidence presented, it may be said in brief that the Philistian epidemic presents the usual features of plague. It was widely and rapidly disseminated, of sudden onset, great severity, high fatality, and characterized by buboes and hæmorrhages. The correspondence with other descriptions seems to show clearly and convincingly that the epidemic described in I. Samuel was true bubonic plague.

As to its source, nothing is or can be known, but the location near endemic centres, the great trade routes through, and commercial importance of Philistia were such as might easily have led to its importation. It is not difficult to understand that it would spread, but how is uncertain. Even apart from the superstition of the period, the Ark or

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some of its draperies, or some of the persons who accompanied it on its journeyings, soldiers returning with spoils of war from the campaign, travellers, etc., may have been the means of conveyance of the infection. But it may have been spread in other ways of which no notice would have been taken at the time, and indeed we cannot even now boast of being informed as to all the ways in which plague is transported from There is no record as to its termination; the Philistines drop out of the narrative on the restoration of the Ark to Israel. the disease, though introduced, did not spread amongst the Israelites is The Bethshemishites practised, albeit inadvertently, the not surprising. best possible means of disinfection when they burnt the cart and oxen. Their dread of pollution from a corpse³¹ would render them most careful in dealing with the bodies, clothing, etc., of those who died. itself was put into seclusion (isolated) for twenty years at least,32 and was no doubt handled most circumspectly by the men who conveyed it to Kirjath Jearim. These circumstances may have saved the Israelites from the disease, but in any case the end of the plague season was near, and the disease would tend to subside naturally. Its cessation is only what might have been anticipated. The assigned date of the epidemic, according to the figures made use of by the authorised version is 1141 B.C., and there is every reason for believing that this date is at least approximately Consequently, there appears to be contained in the few chapters of I. Samuel an account of an epidemic of bubonic plague that occurred over 3,000 years ago, or over 800 years previous to the hitherto accepted earliest record.

Before concluding we may call attention to a still earlier mention of emerods in the Book of Deuteronomy (ch. xxviii., 27), where it is included by Moses amongst the curses for disobedience. The verse reads "The Lord will smite thee with the botch of Egypt, and with the emerods, and with the scab, and with the itch, whereof thou canst not be healed." This language indicates that the "emerods" was a disease already well known in the time of Moses, and that it was a very serious disease, and to be dreaded as bubonic plague has always been dreaded. Hence it is possible, though it cannot be certainly stated, that emerods here also means bubonic plague. If it be so, then the history can be carried back to 4,000 years ago, at which time even it was sufficiently well known to be made use of by Moses as a menace, the nature of which could be understood by the unlearned populace. The disease may have been a familiar one in Egypt before this, and research may yet reveal still earlier records of it. Some of the celebrated "plagues of Egypt" may possibly have been due

to the bacillus pestis bubonicus.

However the present paper claims to deal only with the epidemic of 1141 B.C., and to set forth the reasons which indicate that it was bubonic The evidence to this effect is at least as good and valuable as much of that on which the history has been traced to 300 BC. nothing in either case, which can be subjected to the rigid test of observation which alone is certain. Nevertheless, we believe that the conclusion formed is justifiable, feeling with Sir William Gowers that "Where we have no certainty, we must be content with probability, or relinquish all attempts to know."33

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ICHTHYOL IN THE TREATMENT OF CORNEAL ULCERS.

In the beginning of this short paper it will be well to say something about the etiology and pathology of corneal ulcers. Ulcers of the cornea occur when the stage of infiltration has failed to terminate in absorption and the overlying cornea layers have become disintegrated with the for-In the beginning we find the spot upon the face over it dull. The epithelium exfoliates mation of an open lesion. cornea cloudy and the surface over it dull. upon the surface of the affected spot and soon by breaking down of the most strongly infiltrated portion of the cornea, an ulcer is produced. Besides superficial suppuration we meet with purulent infiltration originating in the deep layers and we also have cases of total suppuration of It may come of purulent conjunctivitis, or it may the whole structure. develop from an active suppuration in deeper parts of the eye. cases it comes with great rapidity, as for example in a marasmic child. In many instances there has been an injury, especially by chips of stone or metal flying from a workman's hammer.

Micro organisms are the immediate promoters in the large majority of cases. There are cases, however, in which we are not able to account for their presence, but we have little difficulty in accounting for them in most cases, especially from injury by foreign bodies, or when the secretions of an inflamed lachrymal sac flow over the eye.

To diagnose a corneal ulcer is not a difficult matter. The leading symptoms are pain, lachrymation, and photophobia. With a good oblique illumination you can very readily make a correct diagnosis.

In children it is not so easily done, and in order to accomplish this, the child's head should be fixed between the operator's knees, while the body is supported by an assistant, and with the use of a lid retractor an

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inspection of the cornea is easily made. The treatment of corneal ulcers is both local and constitutional, and as my paper is intended to discuss the merits of ichthyol as a local measure I will endeavor to say a few words in its behalf.

Ichthyol is a distillation product prepared from a bituminous mineral, found in the mountainous region of the Tyrol which is rich in fossilized remains of tish and sea animals whence the name "Ichthyol." By dry distillation of this bituminous mineral a crude volatile oil is obtained which at a temperature of 212 degrees F. is treated with an excess of concentrated sulphuric acid forming ichthyol—sulphonic acid. This latter substance unites with the alkaline basis, and forms ichthyol salts of which the principal ones are ammonium ichthyol-sulphonate and sodium ichthyol sulphonate, the former being always understood when the term ichthyol is used alone. These substances are both rich in sulphur. Ichthyol is readily soluble in water and mixes well with glycerine, lanoline, vaseline and other oils.

Ichthyol has antiphologistic, anodyne, antiseptic and astringent properties. Its peculiar virtues are largely due to the amount of sulphur it contains. Unne says, "when applied locally it acts as a reducing agent and exerts a peculiar contractile effect upon the vascular tissues; hence the application of ichthyol is followed by a diminution of heat, a reduction of swelling, a paling of the tissues and a relief of pain."

The drug undoubtedly inhibits bacterial development, as proved by the experiments of Fessler and Klein.

Neisser states that a one per cent solution will destroy gonococci.

Ichthyol is not only peculiar in its origin, but in that it possesses so many widely different therapeutic properties, although not a panacea, it has established itself as one of the most valuable therapeutic agents at the command of the busy practitioner.

My attention was called to the use of ichthyol in ophthalmological work about eighteen months ago in an extract from a paper written by a French writer, who had used it, and was advocating it as a remedy for trachoma. I at once applied it according to his method in an old case of trachoma in which there was swell corneal ulcers and pannus. improvement in the ulcers was so marked that I decided to test its merits as a remedy for corneal ulcers, regardless of the cause, and during this time I have used it in a great many cases and some of which are very severe, and my results have been phenominal. The strengths 1 have been using it in varies from ten to fifty per cent. My first experience with the drug in eye work was a fifty per cent solution diluted with glycerine and distilled water. After experimenting with the drug in different strengths I now use about a thirty per cent solution, and weaker solutions for home use. Ichthyol has no bad effect upon healthy epithelium, even in the stronger solutions. It is very painful for about one minute, but the instillation of a 1 per cent. solution of hollocain a few minutes before the application of ichthyol is made renders it much more comfortable to the patients. I say hollocian from the fact that it is itself an antiseptic and is not contraindicated in corneal ulcers as cocaine.

I don't wish to be understood that this is all there is to be done in corneal ulcers, but among the great number of local remedies that are in use, ichthyol has given the best results in my hands. Atropin is used for its anodyne effect and because it lessens the liability to iritis. Eserine is indicated instead of atropine in small sluggish ulcers unattended by active symptoms, or in cases of deep ulcers near the margin of the cornea. In strumous cases tonics should be given, such as cod liver oil, syrup of the iodide of iron, quinine, etc. Medical Herald.

TWO REMEDIES.

Two remedies, one an old one with new indications, should receive the careful attention of medical men. Carbolic acid has always headed the list as the most certain and powerful of antiseptics. No living thing could withstand its dose of carbolic acid.

Its very destructiveness, however, placed it beyond the reach of usefulness and safety, even in the most skillful and careful hands. acid poisoning by accident and by absorption and burns on the hands of surgeons and others who used the drug have been so frequent and destructive as to need no further comment. The discovery that alcohol is an absolute antidote to carbolic acid should mark the greatest advancement in antiseptic surgery. The pure drug may be applied to any surface and its action arrested at any stage by applying alcohol. If accidently swallowed alcohol is its antidote. This knowledge it should be the business of every physician to make known to his patients.

In the treatment of suppurating wounds and old inflammation carbolic acid controlled by alcohol will be found of the highest value and positive cures wrought where the knife only offered hope of relief.

Another remedy long sought for and desired is to be found in in the

Extract of Supra-Renal Capsules.

It is at once the most powerful, non-irritating and non-toxic of vasomotor constrictors. By the use of a three to five per cent aqueous solution of the extract inflamed mucous membranes may be bleached to a condition of complete bloodlessness.

In eye inflammations and the various forms of Rhinitis it gives relief

for hours after a single application.

Its power to render membranes bloodless is greater and more pro-

longed than much stronger solutions of cocaine.

It is an aid to cocaine in the production of anaesthesia, but must be used as a separate application. While cocaine is by no means the dangerous drug it is often stated to be and cocaine fiends are far from being as numerous as many writers and observers among medical and laymen would have us believe, yet this remedy will do much to allay prejudice and give to the physician a more satisfactory and less expensive remedy. Medical Herald.

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THERAPEUTIC NOTES.

Finsen's Phototherapy.

BIE (British Medical Journal, September 30, 1899) describes the methods employed by Finsen in treating lupus, and certain other affections, by means of concentrated light. Finsen is well known from his red-light treatment of smallpox, which was founded on the following considerations:

As the "chemical" (blue, violet and ultra-violet) rays of light are capable of causing an inflammation of the healthy skin, it might be assumed that they would be equally capable of aggravating pre-existing inflammations. In other words, if the deceased skin be protected against the injurious action of the chemical rays of light, it will be possible to diminish the intensity of the inflammation, and thus prevent suppuration. The object is, therefore, to exclude the chemical rays of light which are injurious to the skin. In the new way of treatment, devised by Finsen, these rays are now used as curative agents. The method consists in treating local superficial bacterial skin-diseases by the concentrated chemical rays of light. The experimentally proved data on which the method is founded are the following:

(1) The bactericidal property of the chemical rays of light; (2) the power of the chemical rays of light to produce an inflammation of the skin; (3) the power of the chemical rays of light to penetrate the skin. It is only when the light is concentrated in such a way that it contains as many blue, violet, and ultra-violet rays as possible that its bactericidal property becomes so powerful that it can be used therapeutically with The concentrated electric light, which Finsen now uses for advantage. patients, kills the bacteria till now examined in a few seconds, when they are spread in a stratum of agar, about one-fifth millimetre thick. treatment of patients sunlight is used in summer, otherwise the light of the electric arc lamps of 50 to 80 ampères. In order to avoid burning of the skin and to make the light stronger, the sunlight is passed through a convex lens, made of blue glass and containing a weak ammoniacal solution of copper sulphate. The blue color excludes a considerable amount of the red and yellow rays, and the copper solution absorbs the ultra-red rays, the three rays which have a strong heating effect, while their bactericidal power is insignificant. For concentrating and cooling the electric light the rays are passed through quartz lenses and water.

Some 350 cases of lupus vulgaris were treated. The first patients were treated entirely by light; the same thing being done with all the slighter cases; on the other hand, in the more serious cases the treatment by light was assisted by treatment with pyrogallic acid continent, in order to make the skin as smooth and easily penetrable by the light as possible. While one part was being treated by light the pyrogallic acid was applied to another part; when the cauterization was healed by zinc ointment this area of skin was treated by light; this treatment with ointment was deemed unnecessary for obtaining a good result, but was used because it saved much time. The ulcerations were kept clear of crusts by cataplasms of boric acid solution. The mucous membranes were touched with a solution of iodide and potassium iodide (1:2:2), or were treated

with the galvano-cautery. For the present, at least, only the skin, hard palate, front part of the septum nasi, tongue, and mucous membrane of the cheek can be cured by this method. In none of the cases was the treatment quite without effect, but in five the improvement was very slow. In all the 350 other cases the result was very satisfactory. The advantages of the method are, besides its reliability, its excellent cosmetic results, the infrequency of relapses, and their slight extent, and the fact that the treatment is painless. In lupus erythematosus, while the treatment was not so sure, it gave, in many cases, excellent results,—permanent recovery and firm scars. Seven cases of alopecia areata were cured, a fact which supports the theory of the infectious origin of this disease.

Eudoxine in the Intestinal Affections of Childhood.

BLECH (New York Medical Journal, July 8, 1899) has used eudoxine successfully in the treatment of sixty-three cases of infantile diarrhea. Of these two died,—one patient with acute dysentery, seen on the tenth day, and one patient, aged nine months, with acute ileo-colitis. Recoveries took place: Thirty-eight in twenty-four hours; twelve in two days; two in three days, and six in four days. Eudoxine is a compound of bismuth and iodine, containing about 19 per cent. of the former and 50 per cent. of the latter. It appears as a reddish-yellow powder, tasteless, odorless, and insoluble in water. The dose for infants is two to three grains; for children of 5 to 10 years, three to five grains.

Thyroid Extract for Hastening Union of Fractures.

Lambret (*Echo médical du Nord*, June 11, 1899), reasoning from the good results obtained with thyroid extract, by Gauthier and others, in delayed union of fractures, decided to try the influence of thyroid medication in the treatment of recent fracture. He administered three grains of the gland, thrice daily, to a man who had broken both bones of the leg, in a railroad accident. Since perfect union was secured by the seventeenth day, he is hopeful that in similar cases the time required for union of the fragments may be materially shortened by this method of treatment.

The Uses of Naphtalan.

MERLIN (Wiener medizinische Wochenschritt, No. 5, 1899, and The Medical and Surgical Review of Reviews) has experimented with naphtalan in seventy-nine cases, which comprised cases of phagedenic venereal sores, gonorrheal epididymitis, ulcers of the leg and foot, varicose ulcers, parasitic sycosis, impetigo contagiosa, acute eczema, chronic eczema of the scrotum, and burns of the first and second degrees. In venereal sores no change was produced on the progress of the sores, but in phagedenic sores with much discharge the latter was checked and healthy granulations promoted. In the cases of epididymitis the drug was applied twice daily on lint. It is quickly absorbed, and the inflammation subsides in eight to ten days; no folliculitis or irritation of the skin being produced. Ulcers of the leg and foot much inflamed and in a foul state, after being cleaned with ether, were healed in five to ten days by the application of naphtalan plaster. In cases of varicose ulcers healing

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occurred under naphtalan after a previous operation on the saphenous veins by Trendelenburg's method. Good results were also obtained in sycosis and acute and chronic eczema. In a case of severe weeping eczema of the scrotum, the irritation of which caused sleepless nights, the application of naphtalan after three days enabled the patient to sleep, and the eczema was cured in four weeks. No irritation appears to be caused by the application. The burns were also benefited, and the pain soon disappeared under treatment. The writer strongly recommends naphtalan in dermatology, but it is of less value in syphilitic and venereal sores.

The Treatment of Paralysis Agitans.

Collins and Muskens (New York Medical Journal, July 8, 1899) report twenty-four cases of paralysis agitans, and discuss the treatment of this affection. As in all other nervous diseases, the dietetic and disciplinary treatment are of the greatest importance. The first indication is for the arrangement of an uneventful life, free from care, strife, excitement, and sordidity, in a congenial environment and healthful climate. As a rule, a cool climate is far more grateful than a hot one. should be simple, nourishing, and strengthening. It is absolutely necessary that the patient has the personal care of an attendant, or one of the family. Lukewarm baths, of from twenty to thirty minutes' duration, are oftentimes soothing to the patient. In patients under 40 years of age, applications of water from 90° to 75° F. from the hand of an attendant, followed and accompanied by friction, are sometimes serviceable in combating the distressing attacks of local and general heat of which the patient complains. The authors have never seen anything but detriment attend the use of Swedish gymnastic, though gentle massage is sometimes beneficial. The most important drugs are hyoscyamus and duboisine. hypodermically, which is preferable when possible, or by the mouth, they promptly mitigate the severity of the tremor, and have a pronounced tendency to relax the muscular rigidity. Both drugs must be used with care. Personally the authors prefer duboisine to hydrobromide of hposcine. Of the sulphate of duboisine one one-hundredth to one-sixtieth of a grain should be given two or three time daily. the accession of dryness of the mouth, nausea vertigo, paresthesia, or disturbances of vision, the drug should be stopped. Bromides are powerful agents for harm. In some instances, especially when hyoscine and duboisine fail, some mitigation of the tremor and rigidity may be obtained by the use of gelsemium or veratrum viride. These remedies have been found by the authors more useful than Indian hemp.

Formalin in Surgical Tuberculosis.

HAHN (Centralblatt für Chirurgie, No. 24, 1899) states that he obtained excellent results from a mixture of formalin and glycerin, 1 to 5 per cent., in the treatment of surgical tuberculosis. As an injection into abscesses connected with diseased joints, the author believes that this mixture is superior to an emulsion of iodoform.

Hypodermic Use of Arsenic.

Moyer (The Chicago Clinic) suggests the use of a solution of the anhydrous salt of arsenate or sodium in those nervous diseases in which arsenic is indicated. A number of cases are reported in which the hypo-

dermic use of a 1 to 5 per cent. solution of this salt produced very satisfactory results where other methods have failed. Fowler's solution gave very unsatisfactory results when used hypodermatically causing cellulitis and a consequent abscess, in all probability due to the presence of arsenious acid which had not been converted into arsenate of potassium. Such results have not been observed when the arsenate of sodium solution was employed, and only in several cases where a large amount was injected at one time was a slight induration noticed. The value of the hypodermic use of this drug is readily appreciated when one stops to consider that it is at once taken up by the blood and carried to the tissues, without running the gauntlet of the liver when the toxic effects of the drug are largely focused.—Med. Rev.

Ectopic Gestation: Operation Late in Pregnancy.

Boissard describes two successful operations, classed as "abdominal," through the primary seat of gestation, tubal or otherwise, can hardly be The first patient was 29; the last period proved late in pregnancy. Abdominal section was performed on occurred on March 15, 1898. October 27th, as sudden pain and tension of the sac set in. The sac was incised, and a living fœtus extracted; the edges, which bled very freely, were sewn to the abdominal wound; they were so thin and soft that some of the placental tissue had to be included. The cavity was packed with iodoform gauze. A week later there was high temperature; the placenta began to putrefy, notwithstanding two irrigations of the sac The fœtid odor disappeared, and the temperature fell immediately daily. after irrigation with oxygenated water (10 volumes to 1 litre of 1.7 pint). But, there was much suppuration; an attempt to detach the placenta on the twenty-eighth day set up hæmorrhage, and renewed plugging was required. On the forty-fifth day the placenta came away. Seventy-seven days after operation a small fistulous tract remained. The second patient was 35, the last period occurred on January 19, 1898. Abdominal section was performed on November 7th. A macerated feetus, weighing fou pounds, was extracted. The front of the sac was freely excised to allow of thorough plugging with iodoform gauze, and the edges were sewn to the abdominal wound. High temperature and feetor followed, disappearing as in the other case when irrigation with oxygenated water was On the fifteenth day detachment of the placenta was attempted, but hæmorrhage was worse than even in the first case, and intravenous injection of serum was found necessary, as well as plugging of the sac. The placenta came away eleven days later. The sutures began to come away in the discharges, and the sac took long to close. Eighty-five days after the operation a fistulous tract still remained .-Bull. de la Soc. d'Obstet. de Paris.

Hysterectomy.

At a meeting of the Société de Chirurgie, M. Ricord spoke on abdominal hysterectomy for uterine cancer and said that he had performed that operation ten times with only one death. The gravity of the operation was, consequently, in his opinion, not so great as was believed. None of his patients could have been operated on through the vagina, as the disease had in each case destroyed the greater portion of that organ

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The speaker acknowledged that abdominal hysterectomy was a tedious operation, especially where the ligaments were infiltrated, but it had the advantage over the vaginal method that it permitted ablation of the infected glands.

M. Segond said that he performed ninety-five times ablation of the uterus by the vaginal method with a total mortality of 14 per cent; most of the unsuccessful cases were those in which the vagina and the broad ligaments were invaded by the disease. As to the ultimate result of the operations, out of forty cases of relapse of which he had knowledge himself, the disease returned in thirty cases within the first year, seven in the second, one in the third, and one at the end of the seventh year. Among the cases that might be considered cured, one has already survived ten years, another nine years, two four years, and two two years. He only practiced six times abdominal hysterectomy for uterine cancer. Surgeons, considering this method is superior to vaginal hysterectomy in the treatment of uterine cancer, believed that it was less grave than the latter; according to them it was the only rational operation, permitting the removal of all the ganglions, and they hoped that by-and-bye the prognosis would be much more favorable than that given by vaginal hysterectomy. As to the gravity of the intervention, it was certain that, thanks to the perfecting of the method of operating, abdominal hysterectomy was as a benign as vaginal hysterectomy, but it was none the less true that in cases where the extension of the lesions necessitated ligature of the iliac artery the operation could not be considered less grave than the vaginal method. Those who advocated the abdominal method gave for one of their principal reasons the facility with which the infected tissues could be removed, but that pretension was impossible to realize, but if some few glands were removed could the operator affirm that he left no tissue susceptible to be attacked by the disease? However, he admitted that for a cancer of the body of the uterus or for those forms complicated with softening of the neck, so that it did not afford a hold for the instruments, the abdominal method was the best. When the lesions were not limited to the uterus he never interfered, preferring palliative treatment, which eased the patient and prolonged her existence, frequently for a considerable period.—Paris Cor. Med. Press and Circular.

Anomalous Eruptions in Typhoid Fever.

J. M. DaCosta (Amer. Jour. of the Med. Sciences) reports several cases of typhoid fever presenting, during the course of the disease, eruptions similar to those of scarlet fever and measles. The scarlatina-like eruption is a uniform red rash, usually seen all over the body. It is easily influenced by pressure; it has its periods of greater or less intensity; it lasts generally a week or more; there is no desquamation; there is usually no sore throat or albuminuria; its presence does not seem to influence the temperature.

The eruption simulating measles is rarer and more misleading since the intercurrence of measles and typhoid fever is not uncommon. In typhoid fever the crescentic arrangement is absent as well as the itching, desquamation, coryza and catarrhal symptoms found in cases of true measles. When there is an intercurrence of the two diseases, the onset of the measles is marked by the characteristic rise of temperature and other symptoms peculiar to the disease are present.

Dr. DaCosta also describes a general mottling of the skin which may precede or attend either of the above described eruptions. He believes them to be all expressions of the same pathological condition and due to vasomotor disturbance from disorder of the cutaneous nerves. They seem to have no effect on the prognosis of the disease.—The Medical Standard.

Intestinal Auto-Intoxication.

Mueller (Centralbl f. inner Med.) discussed in the Congress for Internal Medicine, the subject of auto-infection from the intestinal tract. According to the new auto-intoxication theories of disease, championed by Bouchard, Charrin and Albu, uremia, eclampsia, diabetic coma, gout and the conditions resulting from diseases of the typroid gland, suprarenal body, etc., are properly called auto-intoxications, since they result from a poison found in the body. Intestinal intoxications are of another class, since they are due to products formed in the contents of the stomach or intestines by saphrophrytic bacteria. They are rather to be classed with poisoning by meat or milk. Poisoning by meat takes one of three forms, either that of an acute gastro-enteritis, or a typhoidal form, or a form similar to poisoning with homatropine. This last form, called botulismus, is produced by diseased meat in which is to be found the bacillus botulicus. The second form is also due to the ingestion of the flesh of diseased animals. Similarly, milk poisoning may be due to the use of milk from diseased animals, or to the fact that the milk has Many cases of auto-intoxication (ptomaine poisoning?) are improperly so-called. It is at least questionable whether putrefaction of albuminous substances in the intestine can produce symptoms of poison-The indol, phenol, skatol and sulphuretted hydrogen produced by the ordinary bacteria of the intestines, are comparatively harmless in their action, or perhaps it is more accurate to say that the body is accustomed to them and so has a degree of immunity. The subject is an interesting one, but needs a further investigation.

The opinion is now universal that it is not impossible to destroy bacteria in the intestines. In order to accomplish this a medicine would have to be very slowly soluble in the stomach, so that it might reach the intestines unchanged. The claims of the various manufacturers of intestinal antiseptics have no foundation outside of the minds of those who write the advertisements. Calomel acts probably as a laxative. The best treatment lies in the washing out of the stomach and the use of laxatives. A change os diet is also beneficial.

In the discussion of this paper, Stern said that he had disproved by experiment the possibility of intestinal antiseptics as secured by giving drugs, according to the claim set forth by Bouchard. Nevertheless, there is a certain amount of prevention of bacterial action to be obtained by the administration of antiseptics, notably of calomel. Calomel stools will sometimes contain so much of the drug that after standing several hours

there is a great diminution of the number of the bacteria in them, or there may, indeed, be destruction of all the bacteria contained in them. It is, therefore, going too far to say that the disinfection of the intestine is absolutely impossible.—*Med. News.*

New Diagnostic Spots of Measles on the Buccal and Labial Mucous Membranes.

Henry Koplik, in the *Med. News*, says that every case of measles is accompanied by the development of peculiar spots upon the mucous membrane of the lips and cheeks. These consist of small, somewhat circular, spots, which become bluish-white toward the centre. Later the circular outlines disappear and the spots coalesce, leaving the mucous membrane of a somewhat darker color, studded over with these bluish-white spots. This appearance commonly shows itself from one to five days before the breaking out of the disease. With the appearance of the eruption this sign gradually disappears. It is claimed by the writer that the sign is of differential value in distinguishing other eruptive diseases, notably scarlet fever and German measles. The examination must always be made by daylight and with good illumination.—*Ex.*

Amputation of the Fallopian Tubes.

Dr. George Ben Johnson says that the uterine tubes should be amputated in :

Extrauterine pregnancy, whether ruptured or unruptured, if the

tube is much enlarged and altered.

In kinks and strictures, if these are numerous, decided and accompanied by dense adhesions, because having established by operation the previousness of the lumen under such conditions, it cannot by any means at our command be maintained, and may be followed by either hydroof pyosalpinx.

In hydrosalpinx of either the follicular or flowing varieties, for the reason that the naked eye cannot define the limits of the former, and the latter will yield to no other treatment. In simple hydrosalpinx if the tube is greatly distended, its wall much thinned and in the presence of adhesions

In pyosalpinx in every instance where the infection is other than gonorrheal, and in these if the abscess cavity is large and tube walls much impared. Indeed, attempt to save a suppurating tube is rarely justifiable.—Richmond Jour. of Prac.

Erythema Enematogenes.

At a meeting of the Clinical Society of London, Dr. F. G. Still read a paper on "Enema Rash in Children." (The Lancet.) The rash has a characteristic appearance and course, as was apparent from the study of twenty-six cases which occurred at the Hospital for Sick Children, Great Ormond street. Usually a bright red patchy erythema appeared, especially on the front of the knees, the backs of the elbows, the buttocks and the face: in some cases however, the rash was scarlatinaform, or the two forms might be combined. It appeared most often from twelve to twenty-four hours after the enema, and lasted usually from twenty-four to forty-eight hours; there was rarely, if ever, constitutional disturbances the

amount and time of retention of the enema and the duration of the preceding constipation did not seem to affect its occurrence. Scarlet fever, rotheln and measles were the exanthems for which an enema rash is most likely to be mistaken, the absence of constitutional symptoms, of sore throat, coryza and pyrexia serving to differentiate in addition to the occurrence just after an enema and the atypical distribution of the rash.—Albany Med. Annals.

The Results in Administering the Antitoxine of Diphtheria as an Immunizing Agent.

A series of experiments were conducted in the children's hospital, Washington, D.C., by Dr. S. M. Adams to determine the value of the antitoxine of diphtheria as an immunizing agent, and he gives the following conclusions as the result of the observations:

First.—It is impossible to draw any definite conclusions as to the value of the immunizing dose of antitoxine. I am convinced, however, that the dosage was too small, and that if more units had been given better results would have been obtained.

Second.—The average duration of the immunity, as revealed by the observations, conforms with that obtained by other observers; we seem warranted in asserting that the larger the immunizing dose, the longer the duration of the immunity.

Third.—The immunizing dose of antitoxine has no injurious effect upon the kidneys.

Fourth.—Urticaria appeared in two cases, which was the only pathological effect observed.—Archives of Pediatrics.

Technique for Intracerebral Injections.

Albert Kocker recommends the following method of administering intracerebral injections. After shaving and cleansing the anterior half of the scalp, the point at which the injection is to be given is determined with the aid of a craniometer. The fluid is to be injected into the lateral ventricles, and in so doing the motor centres should be avoided. It has been found that a point two and a half to three centimetres from the bregma meets all indications. After cocainizing the scalp in this region a bone-drill is applied at the selected point, and a hole drilled through the scalp and cranium; upon withdrawal of the instrument the hypodermic syringe is inserted and the medicated fluid injected into the lateral ventricles. The method is so simple that it can be employed without any difficulty in practice outside the hospitals. The author cites a case of tetanus, in a 12-year-old boy, with whom he carried out the simple operation with great satisfaction, two intracerebral injections of tetanus antitoxin having been administered.—Central. fur chirurgie.

Constipation in Infants.

Constipation in infants is the practitioner's bugbear. He recognizes the inadvisability of the habitual administration of laxative drugs to the young, but is often driven to countenance their use by the paucity of the resources at his disposal. It is important to bear in mind that constipa-

tion in infants is due, in a large measure, to the element casein, which, if it is present in milk in larger quantities than normal, as compared with the fatty elements, tends to interfere with the due performance of the digestive functions. A child fed on normal casein, but with a low portion of fat, will probably be constipated. In breast-fed children it does not follow that the proportions of casein and fat are normal, for the maternal supply may be faulty in this respect. Disturbances of health, especially in the direction of indigestion on the part of the mother, will necessarily be reflected in the composition of the lacteal secretion, as can be demonstrated by analysis. The first step, therefore, must evidently be to regulate the habits and life of the mother. She must be placed on a diet of fresh meat, fresh vegetables, and freshly cooked fruit, with due provision for regular exercise and restriction in the matter of tea drinking and other dietetic irregularities. This régime will diminish the proteid and increase the fatty constituents of the milk, and will go far to rid the infant of the tendency to constipation. Should it fail, the best treatment for the child is the adminstration of cream in doses of from one to two teaspoonfuls in warm water from time to time just before the periodical meal.—Medical Press and Circular.

Enteric Fever.

Dr. William Cecil Bosanquet, in an article on "Notes on Two Hundred and Fifteen Cases of Enteric Fever" (Charing Cross Hospital) published in the British Medical Journal, refers to the treatment employed as follows: "As a rule, treatment was expectant and consisted of liquid diet. absolute rest, and attention to symptoms. The routine medicine was diluted hydrochloric acid, with syrup of orange and water. fever was treated by tepid, cold, or iced sponging. Ice-cradling was also employed with less visible benefit. In one case treated by raising the bedclothes on a cradle, the patient died of double pneumonia. pyretic drugs were not frequently used, with the exception of quinine. Of antiseptics, turpentine was which appeared beneficial in some cases. most frequently relied upon, and was taken well in most instances. The same cannot be said of naphthalene, which frequently caused sickness. In at least one case the pills in which it was contained were persistently passed in the motions unaltered. Antityphoid serum was used in a few cases without visible effect. In one of these cases a relapse subsequently occurred."—Medical Record.

Blennorrhoeas not Caused by the Gonococcus.

Axenfeld calls attention to the fact that while the majority of blennorrhœas are caused by the gonococcus, cases do not infrequently occur in the etiology of which other organisms are concerned—for example:

(1) Diplococci, which are morphologically indistinguishable from gonococci, and are frequently found, like them, within the cells, but which do not decolorise by Gram's method and grow like staphylococci on ordinary media at the temperature of the room. Attacks of blennorrhœas caused by these "pseudo-gonococci" are, as a rule, milder and shorter in duration than the ordinary form.

(2) Pneumococci. The diagnosis may be made by microscopic examination alone. The cornea in these cases is seldom affected, and recovery is rapid, sometimes by a sort of crisis. The incubation period in infants has not yet been determined, in adults it is about four days.

(3) The bacillus of Koch-Weekes may set up an acute conjunctivitis, but it is rarely met with. The small size of the bacilli which decolorises

with Gram is characteristic.

(4) Axenfeld has seen two cases of conjunctivitis caused by the B. coli communis. The condition resembled that of a moderately severe

gonococcal blennorrhoea, but in each case remained one-sided.

(5) He has also had one case (in a child 5 days old) of double diphtheritic affection of one cornea, which quickly improved after anti-toxin was injected. The cornea, it is to be noted, improved much less rapidly than the conjunctiva, a fact which may be explained by Coppez's observation that the cornea is not affected by the diphtheria bacillus directly, but by accompanying pyogenic organisms.

(6) The author has also seen two instances of well-marked blennor-rhoea in which no bacteria were found at all. These he ascribes to

chemical irritation.—Deut. Med. Woch.

Summer Diarrhoea in Infants.

As summer diarrhoea is so apt to be of a putrefactive nature, all agree upon the necessity of completely clearing out the gastro-intestinal tract as a necessary start in the treatment. In most cases when the physician is called, the sotols are loose and there may be vomiting. By at once stopping all milk, the stomach is soon emptied, and the principal indication is to clear out the bowel. If vomiting continues, draughts of tepid water may be administered, which, when rejected by the stomach. wash out that organ. I do not believe that it is often necessary to wash out the stomach with a tube. Sometimes when there is excessive irritation of the stomach, with much production of mucus, one washing out. however, will give relief. I usually employ tablet triturates of calomel. gr. 16 every hour until six or eight have been administered. These small doses act as a sort of stimulant to the bowel, increase glandular activity, and usually effectively clear out the canal of its fermenting contents. The drug is also supposed to have some antifermentative effect. sized dose of castor oil is also effectual, and is followed by a sedative effect on the mucous membrane. The drug that I have found most useful in the summer diarrhoea of infants is the subnitrate of bismuth in large doses. As far as I have observed, the subcarbonate, salicylate, and subgallate of bismuth and beta naphthol bismuth have no decided advantage over the subnitrate, which is everywhere procurable.—Chapin, The $Medical\ Nervs.$

Ten Cases of Cerebro-Spinal Fever.

Doolittle (*Med. News*) reports ten cases of epidemic cerebro-spinal meningitis. Three of the patients were between eighteen and twenty-eight and seven between four and eleven. All were in previous good health. No two were of the same family though five cases occurred on the same street, within a distance of two blocks. Five cases were fatal,

a mortality of 50 per cent. The onset in nine cases was sudden, in one it was preceded by headache for two or three days. Vomiting and headache were present at the onset in every case. The pulse was rapid, the respirations increased and the temperature irregular in all. Vomiting, pain in the side, headache, photophobia, delirium and herpes labialis were present in every case. Spinal rigidity and cervical tenderness were rarely present before the third or fourth day. General hyperesthesia was noted in five cases and pain in the abdomen in four. Muscular twitching was generally present. No paralysis followed recovery. Pneumonia was a complication in four cases; all were fatal. Albumin was present in the urine in every case. Swelling of the joints was noted twice. No bacterial examination was made.—Med. Stand.

Lumbago and Sprained Back.

Dr. J. Schneck (Railway Surgeon) gives the following differential diagnosis between muscular rheumatism and sprained back:

MUSCULAR RHEUMATISM.

1. History of myalgia.

2. Patient underfed or overworked.

3. History of exposure.

- 4. Pain often confined to one side.
- 5. Pain and tenderness greatest in fibrous portion of muscles.
- 6. Often a history of malaria.

7. Usually no fever.

- 8. No shock or vomiting.
- 9. History of a sudden jar or sprain not necessary.

BACK SPRAIN.

1. Not necessary.

2. Usually the contrary.

3. Not necessary.

- 4. Usually both sides.
- 5. Greatest at tendons.

6. Not necessary.

7. Fever usually present.

8. Often present.

9. History of a sudden jar always present.—The Medical Standard

A Case of Bullet Wound and Traumatic Bone Necrosis.

Mr. Ora Rogers, Corona, N. Y., aged 29; American; bullet wound with necrosis of head of tibia; admitted September 6, 1897. Three years ago, while examining a revolver in a kneeling position, the weapon was discharged, and a 38-caliber slug entered below the knee joint, striking the head of the patella, breaking off a spicula of bone from the condyle and driving it into the head of tibia. These particulars of the effect of the shot transpired in the progress of the operation at this hospital; but the patient had insisted that the bullet had lodged in his knee, and from the pains so long experienced had been taught that it was located in the popliteal space. Care preliminary examination of the leg, however, gave

no evidence of the whereabouts of the bullet. It was, therefore, determined to make a thorough fluoroscopic examination of the entire limb, from hip to toe. Still not the slightest trace of a bullet could be detected. There was, however, a darker spot in the picture of the head of the tibia, which indicated an abnormality of some kind.

From the intense pain which the patient had for a long time been suffering, the stiffness of the limb, the general physical appearance and family history, I had suspected a tubercular osteomyelitis, and as his condition was plainly growing worse I had strongly advised immediate operation. After some days of deliberation he consented, and as soon as practicable was admitted at Sound View, as above stated, and examined by x-ray with the faint guiding indication already described. Two weeks were given to corrective and supporting regimen, with bovinine in milk or whiskey as the condition required; with phosphate of soda and sulphate of strychnine as required.

September 21st, after thorough sterilization of the leg and etherization of the patient, an incision was made six inches long, extending from two inches above the knee joint on the inner side down to about two and a half inches below the head of the tibia, and a careful dissection was made exposing finally the tibia head. After dissecting the periosteum aside, a small trephine was applied, and a button of bone was taken out of the head of the tibia. I now found that the head of the tibia was diseased throughout; having, as I had surmised, developed tubercular osteomyelitis. The entire head of the tibia was then cleaned out with a heavy bone curette, leaving it a mere shell. Fortunately this condition had not extended into the fibula, femur or patella, but was confined as yet to the head of tibia; neither had the joint been opened.

Just at this stage of the operation there was discovered a most remarkable circumstance; the course of the ball, after striking the head of the tibia, had been around the knee, and had actually made its exit at its point of entrance without being observed, and of course without being looked for outside of the wound, since there was no apparent aperture of exit, and the conviction of its three years' lodgment in the knee had naturally been invincible until now.

The cavity of the bone was at one cleansed out with the bovinineperoxide reaction, and the product washed out and sterilized thoroughly with Thiersch solution, and then packed with iodoform-bovinine in sterilized gauze The wound was closed for half its length equally above and below; using four sutures, two above and two below the knee This packing was charged every twenty-four hours for one week, with daily cleansing and sterilization as before, when the bone cavity was found beginning to fill up with healthy material. But so much necrosed bone had been removed that I deemed it necessary, for a complete and rapid cure, to employ sponge grafts. From the finest quality of sponge, after being specially prepared, a small layer about the thickness of a finger nail was shaved off with a sharp scalpel, gently laid in the bone cavity, and fed with bovinine by a dropper, the wound being kept open. In five days of this continued treatment, the first sponge graft had been vitalized, healthy granulations having sprouted like little vines, ramify-

ing through the spores of the sponge. On the seventh day after the first another sponge graft was applied, and treated in the same way. also became vitalized, and had pretty nearly filled up the bone cavity with new bone, within seven days, or on the third of October. later, a third sponge graft was applied, keeping up the bovinine peroxide and Thiersch sterilization and bovinine dropping from day to day. days more sufficed for this last graft, as nourished by supplied blood, to become not only vitalized but converted to solid bone, like its predecessors, and to fill the cavity entirely. Periosteum was now dissected up and brought in opposition over the site of the late cavity, by means of continuous horse hair sutures. This united completely and firmly, fed with the blood-conserve, in five days. The edges of the external wound were then freshened and brought in opposition by strapping and two heavy catcut sutures, dressing with pure bovinine. The wound was entirely healed November 2d, but the patient was kept two weeks longer to watch for sequelæ, of which none appeared but those of perfect health and soundness.—From Georgia Journal, Medical and Surgery, May '99.

EXTRACT FROM "HOW TO SAVE THE PERINEUM." By C. E. Fisher, M.D., Medical Century, Chicago.

There are three parts of the child which tear the maternal structures. Commonly it is considered sufficient for the obstetrician to protect the outlet from injury as the head passes out of the parturient canal. And just here lies the greatest sin of omission of the this is not enough. The head is globular and distends the tissues lying-in chamber. symmetrically. If it is not allowed to press its way forward too swiftly that is, if the abominable practice of bidding the woman to "bear down" as the perineum is reached is abandoned and the labor is retarded, as it should be at this moment-it ought never to lacerate the tissues possible it should never be allowed to escape from the vagina during a pain. The woman should be enjoined to hold up, to go slow, to desist from effort and the perineum should be "gloved" back, as it were, over the head between pains. Times without number have I seen the tissues rip before my eyes or under the vision of my fingers while encouraging the patient to use all her force toward a quick expulsion, this having been the teaching in my student-days and the injunction of every practitioner with whom I have ever worked in the lying-in room. But since I have learned to pursue just the opposite course and insist that the patient shall leave the delivery of the head to me I rarely have even the slightest abrasion from this presenting part. Herein lies the safety of the perineum as the head glides over it. It should be delivered between pains, without the aid of the mother if possible, preferably when she is fully relaxed under an anesthetic.

But observation has taught me more than how to deliver the head without perineal injury. I have learned that the shoulder is the most dangerous part of the child and that the elbow comes next in order of frequency of menace to the maternal outlet. The common practice, to be

satisfied when the head is delivered and the perineum is felt to be intact. is a grevious error and accountable for many a case of vaginal and perineal shredding. The head is globular the shoulder angular. acromion process projects at an acute angle from the trunk of the child and fairly digs down into the vaginal floor under the influence of strong pains. Posterior vaginal rips are almost always from this cause. authors place a good deal of stress upon which shoulder should be delivered first. It matters but little, in my judgment, which first sees daylight, but it matters much how much injury an unguarded shoulder may cause. After the head is born it is my practice to insinuate beneath it, on the floor of the vagina, two fingers of the managing hand, their dorsum being well anointed, and with these to protect that floor from By spreading the fingers just a trifle the acromion process is allowed to rest between them and the pressing surface is thus made broader and flatter. This position is maintained until the shoulder shall have passed over the veginal ostium, when the elbow is gone after and treated in like fashion.

I condemn myself severely now whenever a vaginal perineal laceration occurs. And I go so far as to hold that except in the severest types of abnormal labor there is actually no justification for injuries to the maternal soft parts. Rushed labors, neglect to deliver the head between pains, and lack of specific attention to the delivery of the shoulder and elbow are the responsible factors and are all easy of elimination from the lying-in chamber.

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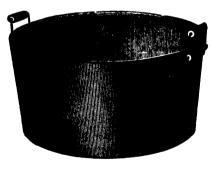
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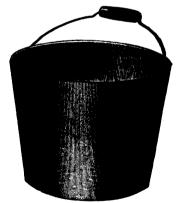
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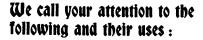
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EDITORIAL.

A MEDICAL DEFENCE ASSOCIATION FOR ONTARIO.

The case reported by Dr. J. Moore Concrty, of Smith's Falls, in this number of the LANCET, again directs the attention of the profession to the necessity for the formation of an Association for Medical Defence in In Great Britain and elsewhere the profession has organized for the protection of its interests, and at different times there has been considerable agitation among the doctors of this Province for a similar action, without as yet, any definite result. The attempts, particularly of ungrateful pauper patients, often instigated by that even more unscrupulous and despicable creature, the shyster lawyer, to prey upon the profession and to extort blackmail in cases of alleged malpractice, has of late become such a nuisance as to urgently demand an effective remedy for its The prevalent idea that a doctor will compromise for a small sum rather than suffer the loss of time and the annoyance, as well as the publicity attendant on the defence of a case, makes him a particularly favorite victim for extortion. Moreover, as the plaintiff is usually penniless, and the law does not require any guarantee for costs, the doctor, even when he wins the case, has to pay his own Solicitor's and Counsel's fees, without having any means of redress: it thus becomes much less expensive to compromise than to defend. Every case so compromised is but an incentive to further litigation, in which, regardless of the merits of the case, the doctor is the loser. It therefore becomes a matter in which the whole profession is interested, to see that every case is fought to a fair finish.

An Association for Medical Defence, with a small annual fee from each of its members, would furnish the means requisite for this purpose, without a great sacrifice on the part of the individual. Proper defence would go a long way to discourage this kind of litigation, by removing the motive which prompts the action in a large number of cases—the extortion of blackmail. Such an Association would not attempt to shield the unworthy, nor pay damages when justly awarded, but would seek to protect and assist in the defence of members subjected to unfair action.

We believe that some of our influential Medical organizations, as the Ontario Medical Association, should take the matter up, and by full discussion, obtain the opinions of the practitioners throughout the Province in reference to it.

Dr. Conerty, we are sure has the sympathy of the profession in the case now before the Courts. We are informed that his confrerès in the eastern end of the Province are making an effort to assist him in the defence of his case, and that the Divisional representatives of Nos. 15 and 16 have issued a circular asking for subscriptions to that end. We believe their action will meet with general approval, and a hearty response from his professional brethren throughout the Province.

A CASE OF COLLAR FRACTURE WHICH GAVE RISE TO A SUIT FOR MALPRACTICE AND PROLONGED LITIGATION

After a delay of somewhat more than two years, I desire to report the following case, not because of any new ideas in the line of treatment, but rather on account of a complication which led to unsatisfactory results, and further to show how a surgeon in the faithful performance of his work may be called on to defend himself in a most unjust action.

On the 11th of September, 1896, I was summoned to the home of Mr. A—— whose boy, a strumous lad of about ten years, had fallen from a beech-nut tree. On examination I found a fracture of the lower end of the radius (right arm) and a bruised condition of the Thearticular Eminence corresponding to a point marking the juncture of the middle with the inner third of the outer head of the Flexor Brevis pollicis muscle, also some scratches which had been bleeding, on the dorsal surface of the hand.

After administering an anæsthetic I washed the head and arm in a bichloride solution 1 to 2,000, and proceeded to reduce the fracture. The dressing used to retain the fragments in proper position was two lateral splints, well padded, measuring about two and one-half inches wide and extending from near the elbow to the meta-carpo phalengeal articulation.

A pad consisting of a roll of bandage one inch in diameter wrapped in absorbant cotton was placed in the palm of the hand, on which rested the distal end of the anterior splint and an antiseptic pledget of gauze was placed over the bruised area.

The splints were held in position (in the absence of adhesive plaster) by two "ties" of bandage placed one at the wrist and the other near the elbow. A bandage was then applied over the splints and the arm placed in a sling. Directions were given to keep the boy at rest and the hand elevated.

I saw the boy on September 13th and 17th, and found everything satisfactory. The boy did not complain. He was playing about two days after the accident. I did not see the boy again until October 4th. When I called at his home, on this date, I removed the splints and found the dressings and hand in a very dirty condition. So far as the bone was

concerned I found union good and with no deformity. After bathing the hand in tepid water I discovered an indurated patch of skin over the seat of bruise which was showing signs of separation from the healthy I considered it the remains of the bruised tissue which nature had not been able to take care of. It was superficial. Before going I dressed the hand antiseptically.

Three days after, on October 7th, I again called, and on examining the hand found signs of separation of patch more marked dressed it as on previous day, gave instructions to have the boy brought

to my office the next day to have his hand dressed.

He did not come as directed, and I afterwards concluded that his hand was all right. On Nov. 14, Mrs. A--, who was about to be confined, called to consult me regarding her condition. On leaving my office she mentioned that the "sore" on the boy's hand had not healed yet. reminded her of my instructions, to bring the boy to my office to have the hand dressed, and told her to have the boy brought to my office at

On Nov. 16 Mrs. A--- brought the boy, and on removing a dirty rag which served as a bandage, I found a deep sloughing sore the size of a twenty five cent piece The indurated patch of skin referred to before was still hanging to the surface of the sore by some fibrous shreds.

The wound had become infected with pus-germs which had burrowed The thumb was held in an adducted and semi flexed position in

order to relieve any tensions on the ulcerating surface.

On inquiring why the boy had not been brought to me as I had directed, Mrs. A -- replied that "she thought the hand would heal all right. She had tried everything on it to heal it. Spoke of some salve she had obtained from a neighbor woman, the healing properties of which were unsurpassed," and concluded by saying that "she didn't know what kind of a young one he was, for if he got the slightest scratch it seemed never to heal."

On this occasion I got the sore cleaned up as well as possible, applied a proper dressing and instructed the boy to come to my office every day until his hand was all right. He came irregularly and it was almost the

middle of December before the sore had completely healed.

As there was loss of integument and subadjacent tissues there was contraction in the process of healing which was much favored by the position in which the boy held his thumb—hence we had a slight deformity consisting of an abduction of the first metacarpal bone, causing the thumb to be drawn toward the median line of the hand to such an extent that it interfered with the complete flexture of the index finger.

Owing to the youth of the patient and being deterred from doing a plastic operation owing to the unsanitary and septic conditions existing in the boy's home, I determined to try "Massage," promising good results if I had the co-operation of the boy and his parents. I encouraged the boy to come to my office every day for treatment and I explained to his parents how to rub and manipulate the boy's thumb in order to restore its position.

The boy came five times during the month of January. After this I did not see anything of him until the first of June, 1897, when he

appeared accompanied by his father, who for six month's

been threatening to bring an action against me for malpractice, and boastfully claiming that he would get \$5,000.00 if he did so.

On this occasion I charged the father and son with neglect, and pointed out to them where my directions had not been followed. informed the father that I had not seen the boy for more than three months. The only excuse elicited from Mr. A ——— for his negligence in not executing my orders was that he thought the treatment I was giving the boy was not doing any good. He further stated that he had consulted other doctors who said that "the hand would have to be split up.'

I discouraged any operative procedure at this time and told Mr. - that I would not operate without giving "Massage" a fair trial; that "Massage" properly and persistently applied would, in my opinion,

restore the functions of the thumb.

After again showing him how I wanted the hand treated, I requested Mr. A——— to so treat it for ten minutes every night and to advise the boy's mother to do likewise every forenoon. The boy was also to come to my office every afternoon at five o'clock. He came only four or five times when I again lost all trace of him and have not had an opportunity to do anything for him since.

In answer to inquiries as to home treatment the boy told me that his mother had not time to treat his hand and he was always in bed when his father came in at night, consequently there was no home treatment.

During his latter treatment I procured a plaster cast of another boy's hand and after padding it carefully would place the patient's hand in the cast with the thumb in an extended position. The hand was kept in the cast by a bandage, this I afterwards learned was taken off as soon as the boy would go home.

On the 5rd day of January, 1898, I received a letter from Mr. A's solicitors asking for damages for alleged malpractice, and threatening that unless they heard from me a writ would be issued within a week's time. The letter also stated that Mr. A. would consider any offer of settlement. There was no offer of settlement, consequently at the expiration of a week

the promised writ was issued asking for \$6,000 damages.

The case came down for trial at the Spring Assizes in Perth, but owing to the inability of the plaintiffs to secure medical testimony they asked for a postponement. We thought the case would end here, but during the summer the council for the plaintiffs secured the services of other medical men who were willing to aid the plaintiffs in their game for

Consequently at the Fall Assizes the case went to trial, and after a fight lasting two days we succeeded in getting a non-suit with judgment

The plaintiffs at once appealed to the Divisional Court asking for a new trial on the ground that "on the evidence the case should not have

been taken from the jury."

After waiting almost a year the Divisional Court, I am sorry to say, gave judgment against me, ordering a new trial and saddling all the costs Mr. B. B. Osler, my counsel, at once appealed from this judgment of the Divisional Court to the Court of Appeals, where the case now stands for argument. We expect a decision from the Court before the

end of the year as the case is on the list for argument during the present session and let us hope the decision may be favorable.

Notes—The contention of the plaintiffs is that the sore on the boy's

arm was produced by a splint.

We know the cause as stated previously, the fall causing devitalization of the tissues, and subsequently infection, and further, we declare that owing to the location of the sore it is impossible to produce such by

means of a splint.

The deformity which is slight, is due to cicatrical contraction rather than to any peculiar art in bandaging as alleged by the plaintiffs. would never have been any contraction had there not been neglect on the part of the plaintiffs (from Oct. 7 to Nov. 16) allowing the "sore" to become deeply infected by pus organisms, with consequent loss of tissue.

The plaintiff is a worthless fellow.

Judgment summons proof who at the time he began the action was under an order of commitment to jail for debt No matter therefore how successful we may be in defending we must pay the costs of defence.

Just a word about settlement. During the first days of the proceedings we offered (rather then spend money in litigation) to take the boy and place him in a hospital public or private, and operate on his hand, or otherwise treat it in order to restore its usefulness provided we could have absolute control of him while under treatment. They would not accept this unless we gave them a guarantee. We, of course, could not guarantee anything.

I presume at this time \$200 would have settled the case but I considered that such a course would not only be unjust to the profession,

but particularly so to myself.

While it would have been much better for me financially to have settled, yet in doing so, I would only be encouraging a class of unprincipled and irresponsible fellows, who are after plunder rather than our earnest efforts on their behalf.

It is true, and I have experienced the force of it, that when confronted by all the annoyance of protracted litigation, the enormous expense, which many of us can so ill afford, besides the injury to our professional standing, etc., the first suggestion which is apt to come is to get the matter settled as quickly and consequently with as little publicity as possible. And we ask the question, would it not be better to pay something at once and get out of the difficulty? My answer is No! A thousand times No! so long as we feel that we have done our duty and are therefore morally irresponsible.

It is the duty and ought to be the desire of each member of the profession to suppress by every possible means all such actions which are so frought with injustice, not only to the individual, but also to the pro-

fession as a whole

Just so soon as a certain class of the public and those who advocate their claims in Court, understand that we do not listen to their "bluff. That they in order to possibly gain anything must fight every inch of the ground against a united profession, then and not till then will the members of our profession be relieved largely, if not entirely, of a most painful annoyance as well as to many of us a severe financial loss.

Sincerely yours,

THE TREATMENT OF HEADACHES.

BY ALEXANDER HAIG, M. D., F. R. C. P.,

Physician, Metropolitan Hospital.

Pain in the head as elsewhere is very commonly due to pressure, and headaches may be conveniently divided into:

- 1. Temporary.
- 2. Chronic.
- 3. Paroxysmal or recurrent.

Temporary headache may be due to any accidental cause, as an injury or a fever which causes for a time an alteration of pressure inside the skull or membranes; but as these pass away so does the headache, and it rarely requires more treatment than an icebag for a few hours.

Chronic headache is one which lasts with little change hour after hour, day after day, even week after week, or month after month. It may be said to be chiefly due to two causes:

- 1. New growth on the skull or membranes or within them.
- 2. Neuralgia, often only another name for inflamation and pressure about the teeth, or the structures that surround them.

The treatment of (1) is a matter of surgery and the pain and pressure are relieved by opening the skull and membranes, or in the case of specific new growths by iodides which cause their absorption.

(2) Requires attention to the teeth, with or without quinine, and purges which lower blood pressure.

The paroxysmal headache tends to return after more or less definite intervals either of weeks or months, for years, often for the greater part of the lifetime of those who suffer from it; but a given attack rarely lasts more than 48 hours. It is therefore at once distinguished from other forms of headache by history, or in the absence of history in that it lasts less than 48 hours.

It has also special characters which serve to distinguish it, namely, it is accompanied by a small hourly excretion of urinary water and a large excretion of uric acid, both relatively and absolutely; the pulse-rate during the headache is slow (often below 60) and the blood pressure high.

It commonly occurs in individuals whose blood pressure is too high, and there is a marked rise of this pressure at the time of the attack.

The capillary circulation in the skin is slow during the attack, and quickens as it passes off, and similarly the defective capillary circulation in the kidney is the cause of the scanty urine which accompanies the attack, and the improved circulation is shown by the diuresis which follows it.

The paroxysmal headache is thus shown (and the demonstration can be made absolute both by producing and removing it at pleasure) to be due to paroxysmal fluctuations in the excretion of uric acid.

It is prevented with absolute certainty by diminishing the uric acid in the body, and preventing large fluctuations in excretion.

It can be produced by swallowing definite quantities either of uric acid or bodies of the alloxur or xanthin group, and all of these produce at the time of the headache a large excretion of uric acid in the urine, excess of granules in the blood, a slowing of capillary circulation, and a rise of blood pressure.

The explanation of this paroxysmal or uric acid headache is thus absolutely complete, and this is demonstrated by absolute power of control.

We find, also, that the uric acid headache is but one instance of a general law, that uric acid is the cause of high blood pressure not in this case only but in all conditions, and throughout life, and that it is thus the cause of a very large number of what have hitherto been considered as different diseases, though practically the whole of these are really represented in epitome, as it were, in the symptoms of the uric acid headache itself.

We now know that the central factor in this group of symptoms is the uric acid in the blood, and it is in excess in the blood at the time when it is passing in excess in the urine.

Excess of uric acid in the blood obstructs the capillaries all over the body, and causes the slow capillary reflux, which can be easily measured. Obstructed capillary circulation with a strong heart means high blood pressure between the opposing forces, and the headache is the effect of pressure inside the skull membranes produced by the high blood pressure, so that it has an identical causation with other and more chronic forms of headache; all are due to pressure—they differ merely in the cause of the pressure.

With one or two insignificant exceptions uric acid is the cause of all high blood pressure; and as I am pointing out in a paper also before this meeting, the diurnal fluctuations of blood pressure which occur in everyone are but the results of the normal diurnal fluctuations in the excretion of uric acid and its passage through the blood on the way to be excreted. As these fluctuations in the excretion of uric acid are the results of well understood causes, which are completely under our control, the resultant fluctuations of blood pressure can be made to take any direction or time relation at pleasure. Thus the head pain of this headache is but the representative—and often the forerunner—of the more severe pain and coma of uræmia, and the high blood pressure bears a similar relation to both.

The fits which in some sufferers replace or supervene upon the headache bear a similar relation to the fits of uræmia, and the fits of epilepsy are often, as I have shown, related to a similar fluctuation in the excretion of uric acid, and have a similar causation.

The defective capillary circulation passes through all gradations such as are met with in diabetes and Bright's disease, where the blood pressure is again high, up to the local gangrene of Raynaud's disease.

Mental depression and melancholia, so well known to be associated with high blood pressure, are again represented in the low spirits and general mental obfuscation which surrounded the headache.

The fall in the excretion of urea which accompanies the onset of the headache is, again, but the epitome of the more marked fall accompanying the onset of Bright's disease; and the rise which follows the headache is also represented in the rise which accompanies the cure of the Bright's disease when possible. And the fall in the blood decimal (or worth) which accompanies the headache is, again, the epitome of the more severe and extensive anæmia which follows the still more severe collæmia of chlorosis, rheumatism, or Bright's disease, all these latter conditions being associated with increase of headaches in those who suffer.

The whole of these conditions, when due to uric acid and when they have not through neglect become organic, from atrophy of important tissues (which defective capillary circulation at length brings about), are amenable to the control of the uric acid in the same way that the underlying conditions, capillary circulation, and blood pressure are so.

The treatment of the paroxysmal uric acid headache is the clearing of all available uric acid from the body and blood, and this is accomplished by:

- (1) Avoiding food or drinks which contain uric acid or xanthin.
- (2) Not taking more nitrogenous food than physiology requires.
- (3) Clearing out stores of uric acid already in the body from neglect of (1) and (2).
- (1) Means the avoidance of all animal foods except milk and cheese, and of certain vegetables substances rich in alkaloids (as tea, coffee, etc.)
- (2) Means taking enough albumen to produce from 3 to 3.5 grains of urea for each pound of body weight per day, but not more.
- (3) Is generally sufficiently provided for by the change of diet, but occasionally it is necessary to give a course of courses of salicylates to aid elimination.

Anyone thus completely altering his diet may expect a distinct dimmution both of the frequency and severity of the headaches in a few weeks, and that they will be reduced to one-tenth or one-twelfth of former numbers in twelve to eighteen months, which, with a correspondingly large decrease in severity, amounts practically to cure; but let him again take uric acid in any form and they will quickly return.

With improvement in the headache will go improvement in the blood decimal or "worth" quickening of capillary circulation and fall of blood pressure throughout the body; and any accurate measurement of the condition of the blood and its circulation is a perfectly reliable index of the effects of the treatment. B. M. J.

THE THERAPEUTICS OF LIGHT AND HEAT.

BY W. KNOWSLEY SIBLEY, M.A., M.D., M.R.C.P.

Senior Assistant Physician to the North West London Hospital.

In this brief communication I purpose to epitomise the results of several years' work on the treatment of numerous diseases by the local application of dry hot air. Since the publication of my articles on the subject a few years ago I have continued the investigations both in hospital and private practice, and as time has gone on I have become more and more convinced of the great advance in therapeutics which this form of treatment has brought about. The youngest patient treated was a child just three years old, a boy, suffering from epilepsy, and the oldest a woman of 93, afflicted with chronic rheumatism, especially in the hands, accompanied by a considerable amount of pain. Both these patients were treated as out-patients, and did well

More diseased conditions than might at first sight be imagined are benefited by local hot-air treatment. My rule at the hospital for some years has been, when a patient suffering from any complaint does not improve after a few week's routine drug treatment, to order the hot-air treatment, and I must say that in the majority of cases improvement very quickly shows itself, often to a marked degree.

The cases for which this treatment is especially indicated are all forms of arthritis, whether of rheumatic, gouty, neurotic, tuberculous, or traumatic origin, particularly when the process is chronic. I can say with confidence that almost every kind of joint mischief, whether the result of injury or disease, is greatly benefited by local hot-air treatment. Under joint diseases the following would be included, gout (acute, subacute and chronic), rheumatism (acute, subacute and chronic), gonorrheal rheumatism, rheumatoid arthritis, scrofulous disease of joints (for example, morbus coxæ), synovitis, bursitis, periostitis, including syphilitic and all forms of adhesions.

With regard to *injuries* (recent and old-standing) synovitis bursitis and all degrees of stiffness, adhesions, and various conditions of immobity a few words, are desirable. Many of these cases are greatly improved simply by the local application of heat, but, of course, if severe or old-standing, surgical interference by breaking down adhesions greatly increases and accelerates the cure. It is in most cases better to give a course of local treatment before any attempt is made to break down adhesions. Then an anæsthetic may be administered and the adhesions broken down and joints freely moved and placed immediately afterwards in a hot air apparatus. This frequently prevents the subsequent effusion and greatly diminishes the pain; in fact, I have notes of several cases of severe old-standing adhesions treated in this way with little or no pain or even effusion following the operation and with very satisfactory results

 $Hysterical\ joints$ I have found to be amenable to this treatment:

One case occurred in a women, aged 23, who when admitted into the hospital had been unable to walk for two years owing to contraction of the left knee joint; she had had some stiffness of this joint for five years. After two months' treatment she left the hospital able to walk.

So again, cases of either local or general matnutrition, especially cases of feeble circulation, due to local causes such as injuries to blood vessels or nerves, chilblains, cold extremeties, and deformities due to arrested nutrition usually improve, as do most forms of localised cedema

Most forms of neuritis, both gouty and those of a more directly nervous nature (such as peripheral neuritis and traumatic neuritis) do remarkably well; and also sciatica, lumbago, and allied affections, including neuralgia following herpes zoster, are usually cured.

I have had most satisfactory results in a large number of cases of *chorea*. The movements of the limb under treatment rapidly subside while under the influence of the heat, usually returning with less severity shortly afterwards.

One of the worst cases of chorea I have seen occurred in a boy, aged thirteen, who was carried into the hospital quite unable to stand; the head was thrown back, his tongue was protruding from his mouth, and was almost bitten in half with the movement of his teeth; there were incessant involuntary movements of almost the whole muscular system, and the respiration was greatly embarrassed, especially the act of expira-He would take several short rapid inspirations, and then with a great effort a long expiratory one; he was almost unable to swallow, great choking being produced on any attempt at deglutition. The pupils were widely disated, the face pale, and the child was more or less unconscious, with high fever. The day after admission the condition became worse, and acute rheumatism set in in his knees and ankles. few hours there was both endocarditis and pericarditis. Medicinal treatment seemed to have no effect, and the child appeared to be dying. a last resource, dry hot-air baths were ordered. After the first the condition rapidly improved, and the patient left the hospital cured about three weeks later.

His temperature when placed in the first bath was 101°. In the bath it went up to 102°, and an hour after it was 100.6°.

Epilepsy appears often much benefited by treatment, in many cases combined with bromide taken internally. Some cases, however, have greatly improved both as to the duration and frequency of the fits with hot-air treatment alone.

Some forms of paralysis, especially lead palsy and paralysis due to injuries to the nerve trunks, do well under the treatment.

Cases of old-standing paralysis due to central lesions do not improve to the same extent, but these, especially those associated with coldness of the paralysed limb, are in time benefited, more particularly with respect to the nutrition and warmth of the part.

Ménière's disease was in 3 cases greatly relieved.

Chronic bronchitis (especially cases associated with Bright's disease and high tension) was greatly relieved, as were also cases of asthma and diabetes.

I have found the cough greatly relieved in some cases of phthisis, even during the active stage of the disease, and patients have gained weight and expressed themselves as improved.

A good deal might be said of the effect of the dry hot air on the heart; in fact, it would appear that what has been written on the Schott or Nauheim treatment might very well be applied to this. As probably the therapeutic effect of the saline effervescent baths is one primarily of gentle stimulation to the cutaneous nerves, so here again the application of dry heat is an excellent stimulus to cutaneous nerves and blood vessels, and many cases of chronic heart disease undoubtedly do very well; indeed, my experience teaches me that cases need rarely, if ever, be refused on account of heart mischief.

Many of the dry forms of skin disease, such as psoriasis and dry eczema, do very well, so also in cases of sclerodermia (where the patient has never been known to perspire from the affected regions) the skin becomes accustomed to sweat after persevering with the dry hot air.

Chronic ulcers and local inflammatory conditions, such as boils, are cured, as are cases of erythema nodosum.

It is frequently asked if we should administer the treatment to women during menstruation. The general effect of the heat is to increase the catamenia, and therefore in cases in which this is excessive it would not be desirable. I find that, speaking generally, cases of scanty, and especially of painful, menstruation are benefited by the application of heat to the pelvic regions.

Amenorrhœa, especially in young anæmic girls, is an especial indication for treatment at about the time the period is due.

It has recently been pointed out that many of the chronic backaches and pelvic pains of women are probably due to rheumatic changes in the pelvic and uterine ligaments and appendages. These are greatly relieved, and often cured, as might be expected by this form of treatment.

I must now allude to some cases which were not improved by the treatment.

Well-defined Locomotor Ataxy.—A few cases I have treated did not appear to be altered so far as the lightning pains or the ataxic gait were concerned.

Cases of Paralysis Agitans.—Although there was improvement in the general condition of the patient, and increased strength in the limbs treated, there was no apparent diminution in the movements, either during the process of exposure to heat, or as the result of treatment.

To writer's cramp the same remarks apply.

The question of the desirability of treating acute cases of gouty or rheumatic arthritis is a most important one, and I still feel unable to formulate definite opinions upon it. The doubt would seem to be particularly strong while pyrexia, considerable pain, and recent infiltration of the tissues in and around joints are present. The more localised the condition, with these symptoms, the more should I hesitate to predict the result of the first few baths.

The immediate result of the treatment in these cases is sometimes to disseminate the inflammatory process and convert what was at first a local arthritis into a general one, with the consequence that patient and

doctor became alarmed and the treatment is stopped. If treatment be persevered with, and often if in the first instance heat was only applied to one limb, then a whole bath is administered when the condition has become general, the disease rapidly subsides; but the possibility of such an exacerbation of symptoms must be borne in mind from the commencement.

A similar result is commonly met with in acute gout with great tumefaction and excruciating pain in one joint. It the heat process be applied to this joint it will soon relieve the symptoms, swelling will subside, and pain disappear. Probably, however, the same condition (even sometimes more acute) will appear within a few hours or during the next day in the corresponding part of the opposite limb. This of course frequently happens in cases of acute gout when treated by drugs, but the likelihood of its occurence after the heat bath must not be overlooked.

I now propose to mention some facts in connection with the addition of luminous rays to non-luminous radiant heat.

At the present time I am especially interested in experiments with an attempt to determine which of the light rays have the most penetrating therapeutic effect.

It is known, for instance, that the violet end of the spectrum contains the rays which produce sunburn (Bowles). By the simple means of intervening pieces of coloured glass in the light rays it is possible to cut off whatever rays are desired and to only permit rays of one or more colour to be thrown on the part under treatment. Thus with a red glass screen all the violet, which are the irritating burning rays, are shut off and a very comfortable soothing red heat is produced. At the same time the temperature is but very slightly effected.

Very little at present is known about the effect of the various light rays on the animal organism, but a great many experiments on this subject have been made on plants, and the results in this connection are certainly worth noting.

The hæmoglobin of the animal cell has been compared to, and has many functional similarities with, the chlorophyll of the vegetable cell.

The necessity of the human body for light and air is of universal People become anæmic when deprived of sunlight; and so recognition also the entire life of a plant depends upon the action of the light on the cells which contain chlorophyll.

The following facts may be of interest in connection with this subject:

A .- General. 1. Action of Rays of Different Refrangibility.

The rays of different refrangibility which together constitute sunlight, and appear as variously coloured bands in the spectrum, vary in

their physiological action on the processes of plant life.

Chemical changes, so far as they are in the main dependent on light, are produced chiefly or solely by rays of medium or low refrangibility (namely the red, orange, vellow or green). This is the case for instance with the production of the green colour of chlorophyll, the decomposition of carbon dioxide, and the formation of chlorophyll, starch or sugar.

On the other hand, the rays of high refrangibility (the blue or violet as well as the invisible ultra-violet rays) are the principal or the only ones which produce mechanical changes, so far as these are dependent on light. It is these rays which influence the rapidity of growth, alter the movements of the protoplasm, compel swarm spores to adopt a definite direction their motion, and change the tension of the tissues of the mobile organs of many leaves, hence causing movements.

2. Action of Light of Different Intensities.

That the action of light on plants varies with its intensity, as does temperature with its elevation, admits of no doubt, and is obvious in all physiological observations.

3. Penetration of the Rays of Light into the Plant.

The rays of greatest refrangibility are in general almost entirely absorbed by the superficial layers of tissues, while the red light penetrates most deeply.

B.—Special.—(1) Chemical Action of Light on Plants. (a) Formation of Chlorophyll.

All the visible parts of the solar spectrum have the power of turning the etiolated chlor-phyll granules green, but the yellow rays and those nearest them on each side are the most powerful, and this is also the case with the exhalation of oxygen from cells containing chlorophyll.

(b) The Decomposition of Carbon Dioxide.

The influence of light upon the evolution of oxygen is greater the more carbonic acid is contained in the air; only those rays which are visible have the power of decomposing carbonic dioxide, and those which appear brightest to the eye (the yellow rays) are alone efficacious in this process as all the others put together.

(c) The Formation of Starch in Chlorophyll Granules.

The formation of starch is a function of chlorophyll granules exposed to light, its absorption a function of chlorophyll granules not exposed to light. The formation of starch in chlorophyll granules depends on conditions which favour assimilation; and the principal feature of the process, the evolution of oxygen, proceeds vigorously in light consisting of red, orange, yellow, and to a certain extent of green rays; while the more strongly refrangible half of the spectrum consisting of green, blue, violet and ultra-violet rays, has only a very slight effect.

(2) Mechanical Action of Light on Plants.

(d) Without discussing the question, it may be briefly said that the influence of light on the movements of protoplasm varies according to the nature of the motion.

(e) Cell Division and Growth.

Light retards growth; but it is only the rays of high refrangibility, the blue, violet, and ultra-violet, which act in this way.

(f) Action of Light on the Tension of the Tissue of the Organs of Leaves endowed with Motion.

It is only the more refrangible rays that produce a paratonic effect, while the red rays are inert.

These few remarks on the actions of the various light rays upon plant life would seem to open up a wide field for experiment and observation with regard to the treatment of diseases by different light rays in addition to heat rays. It is probable that as we learn more of the pathology of those condition we are accustomed to treat we shall be able to decide beforehand what particular coloured rays would be most serviceable to the treatment of any given disease. Apart from some general principle if we desire a treatment which shall not tend to produce burning of the skin, but one which will pentrate into the tissues, we shall use the red rays, and vice versā. As a matter of experience, I have found the heat produced by red rays far more soothing and less irritating in its effect than using the whole of the rays of the visible spectrum together.

With regard to the general effect of the luminous rays there is no doubt that the addition of luminous rays to ordinary non-luminous radiant heat produces an increased diaphoresis. Patients who do not sweat with non-luminous heat very quickly do so when some light rays are added, and this is often noticeable even at a lower temperature than had been previously tried.—B. M. J.

TORONTO MEDICAL SOCIETY.

Stated meeting November 16th, 1899. Dr. Gilbert Gordon, M.D., Pres., in the chair.

Dr. Rotch of Boston, gave the address of the evening on "Infant feeding." He asked the pardon of his hearers for beginning in an elemementary way, but the subject was one which concerned elements more than anything else if scientifically studied. He had been struck by the unscientific methods of feeding, by the turning over the babe to ignorant nurses to feed and the use by these women of patent or proprietory foods, with a result that the worst and cheapest were used. Again, while medicine, surgery and other branches had made in late years rapid advances, this branch, dealing with the beginning of life and the foundation of healthy citizens, had been neglected.

Throughout the world for ages nature had provided a food causing the least mortality, and which was the best. The breast milk of the average quality was the best for the average infant. And so long as the infant did well on it there was no need to change. The elements of a good human milk were fats, sugar and proteids, in the following proportion:

Fats, 4 per cent. Sugar, 7 per cent. Proteids, 1-2 per cent.

Of these, sugar was the least varying and was always milk sugar, which differed materially from cane sugar. It was supposed, he said, to produce the bacillus lactis alrogens which antagonized the flora of all bacteria and rendered the infants alimentary coval sterili. It was known that changes

in the temperament of the mother produced changes in her milk, these changes were found to be due to an increase of products, causing vomiting and gastric disturbances. This, if not largely increased, could often be reduced by actual exercise, such as horseback riding, on the mothers part. Increases of fat or decrease from the usual standard could often be regulated by diet. It had been found that a large number of healthy babies did well on a breast milk containing fats, 3 per cent.; sugar 6 per cent., proteids 0.50 per cent. He concluded, therefore, that the breast milk must have certain percentages of elements for certain infants, that in fact each infant had its idiocyncrasy, that what one infant did well on another would starve.

He compared milk to a dinner of courses. Some partakers deriving the nourishment from the fish, others from the cereals, others from meats, etc. Few could receive the entire meal. So infants could not take the whole constituents of milk, but the proportion of elements must be modified to suit the individual.

The variety in percentages of breast milk were very numerous and interesting. In increase of fats alone, 4 per cent. would produce most likely diarrhæa, while if under 2 per cent. the milk would not nourish. The proteids might drop as low as 0.50 per cent. and still the infant thrive. There were, therefore, limits which determined good breast milk.

Milk, therefore, should not be considered as such, but as a full meal of three courses or elements, permitting a large variety of combinations, not only from different mothers, but from the same mother. When a baby was not doing well at the breast the milk should be analysed at a laboratory, and if after an attempt to regulate the percentages to suit the

child it was not found possible, it should be artificially fed.

The profession was, he said, very far behind in the scientific manufacture of artificial food for infants. Proprietary foods, he said, were carefully prepared no doubt, but how could they be modified to suit each case when a proper understanding of the elements of milk had been gained? The same held good with the so-called "Cream Mixtures," these contained cream, milk, water, etc, for a certain aged child. Such combinations showed an ignorance of the elements dealt with. If, for instance, an increase of fat were requisite, the directions said add more cream. But he held cream was no more a definite quantity than is milk; therefore, by increasing the cream an increase was also made in proteids, thus upsetting the whole calculation.

For these reasons it was necessary for the physician who endeavored to give a formula based upon a scientific use of the elements to have it filled away from the home, else the mother in her anxiety for her babe may, fearing starvation at the small quantity of milk, add more, thus up-

setting the calculations.

It was quite unnecessary he showed to have predigested food. By giving a lower per cent. of proteid and gradually increasing it the same result was obtained in a far better way. That was by exercising the digestive functions without over-taxing them and thus increasing their activity.

The laboratory was the only place, he claimed, where the mixtures could be scientifically prepared, just as a prescription was filled best by

a chemist.

The attendant physician ordered a certain per centage of elements, and the mathematician at the laboratory calculated the amounts and the food was prepared. This could not be done at home because the mathematical work was beyond most physicians' time or perhaps ability. He could not calculate the quantities himself, he said, and also because of the difficulty of analyzing the supply of cream and milk. Of the use of cereals to break up the curd of the milk he did not approve.

He had not proved that they did so, and the danger of the use of the cereals was the consequent increase of sugar.

The difference in the proteids of human and cows milk was due to the difference in proportion of coagulable and non-coagulable albumen. A child taking 2 per cent proteids from its mother would not take the same per cent. in cow's milk. Because the mother's proteid contained a much larger per cent. of non-coagulable albumen.

Two per cent. proteid in breast milk should be replaced by about 1 per cent in cow's milk. He had found, he said, that a lower per centage of cow's milk proteid would produce the same result as a higher per cent. of breast milk. Probably the former was more nutritive. Always, therefore, begin with a low proteid. He advised, when weaning a baby, to begin with a formula such as—

Fat, 4 per cent. Sugar, 7 per cent. Proteid, 1 per cent.

Later on changing to

Fat, 4 per cent. Sugar, 6 per cent. Proteid, 2 per cent.

And so on until—

Fat, 4 per cent. Sugar, 4 per cent. Proteid, 5.40 per cent.

was reached which represented cow's milk.

Discussion-

Dr. Oldright asked if there were any difference between Jersey cow's milk and other breeds.

Dr. Galloway asked as to the effect upon the infant from a diet of sterilized milk.

Dr. McMahon asked about the cost per diem of feeding by the laboratory preparations.

Drs. Machill, McKee, Oakley, Nevitt, Graham, Chambers, Webster and McPhedran also spoke.

In reply Dr. Rotch said the fats of Jersey milk were not as good as of the Hurdier breeds, as Holsteins, &c. Otherwise there was no difference. He had not seen scurvy follow the use of sterilized food. If food had to be heated any lime water should always be added after this had been done. The expense was about 50 cents a day or 12 cents a qt. for milk.

BOOK REVIEW.

PRACTICAL DIAGNOSIS: THE USE OF SYMPTOMS IN THE DIAGNOSIS OF DISEASE.

Fourth Edition, revised and enlarged by Hobart Amory Hare, M.D., B. Sc. Lea Bros. & Co.

The fact that a fourth edition of this work has been called for within four years is, in itself, a high tribute to its excellence, and shows that it supplies a want acceptably. Practical Diagnosis has advanced so rapidly in the past few years, owing to the introduction of improved scientific methods, and the literature on it is scattered through so many voluminous works dealing with different subjects, that a treatise dealing with the subject in a concise form will be found not only convenient, but a necessary addition to a medical library.

The author has divided his book into two sections—part I, consisting of 13 chapters, dealing with the manifestations of disease in the various organs, and part II, of nine chapters, dealing with the manifestations of disease by symptoms.

The text is accurate and up-to-date, the plates are many and well chosen, and the presswork excellent.

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The author, whose extensive experience in both teaching and practice has peculiarly fitted him for the task, has prepared a work which must prove of great value to teacher, student and practitioner alike. In logical and natural order he has stated concisely and in interesting form the whole story of the present status of this important branch of medicine.

The physiology of infancy, as the basis of this department of medical science, is thoroughly covered; artificial feeding and development receive careful attention, and the entire book is practical and trustworthy. Anticipating an unusually wide usage the publishers have issued the book at a price which will be of obvious advantage especially to students, while at the same time it is mechanically and typographically as nearly perfect as possible.

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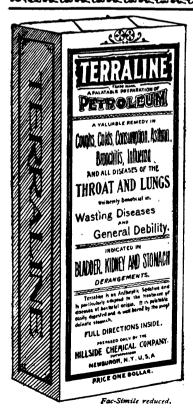
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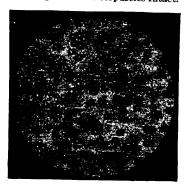
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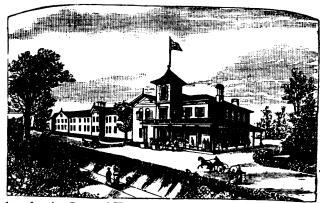
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Nerve-tonic properties of Sumbul.
Blood-making " Iron.
Antiperiodic " Cinchona
Acid Phosphates.
Aromatics, Sherry Wine, q. s.

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NORMAL alkalinity of the blood is secured by prescribing Warner's Lithia Tablets (W. R. W. & Co.). Rheumatism, Kidney Diseases, Gout, etc., are directly due to abnormal acidity of the blood—lactic acid in the former, and uric acid in the two latter. Treatment therefore should be directed to produce alkalinity of the blood.

Lithia is one of the foremost eliminants of the day, and is especially valuable for above diseases, but best of all in the form of Lithia Tablets (W. R. W. & Co.). The dose is accurate, convenient for administration, economical and efficacious. Garrod writes: "One of the most remarkable properties of Lithia is its power of imparting solubility to uric acid."

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AN active and reliable remedy in Rheumatism, Gout, Lumbago and kindred complaints, combining in a pleasant and permanent form in each fluid drachm the following:

Acid Salicylic (Schering's), grs. v.
Cimicifuga, grs. i½. Potass. Iodid., grs. iss
Tr. Gelsemium, gtt. i. Sodii Bicarb.

The advantages of Elixir Salicylic Comp. are afforded by the combination of Salicylic Acid with Soda in excess, thus forming a salt less corrosive and irritating, and more readily borne by the stomach. Avoid imitations and substitutes.

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(W. R. WARNER & Co.)

An active, palatable form of Sodium Phosphate, which, on account of its bland, gentle action and efficacy as a cholagogue, has become a widely prescribed preparation.

It is useful in

CONSTIPATION NO TORPID LIVER.

Its refrigerant saline action recommends Eff. Sodium Phosphate (W. R. W. & Co.) in all exanthematous fevers.

Used to advantage in all Nervous Diseases where the system is sub-normal.

DOSE.—One or two dessertspoonfuls. As a purgative, two dessertspoonfuls. As an alterative, one dessertspoonful. It is more efficient taken before breakfast or at bedtime.

"SPECIFY WARNER'S."

Eff. Bromo Soda

(W. R. WARNER & Co.)

For Sick Headache caused by indigestion and over-indulgence.

Headache resulting from protracted mental effort and close confinement.

Headache due to loss of sleep and rest.

Dull Throbbing Headache from over-work and disordered stomach.

Headache from excessive use of tobacco or over-eating.

Bromo Soda will quickly relieve Neuralgic and Rheumatic Headache.

Where nervous depression follows deprivation of alcoholic stimulants, opium, etc., when habituated to their use, BROMO SODA is recommended with the utmost confidence as a prompt and certain remedy.

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Afford an innocent remedy for the successful removal of superfluous flesh.

Acting on the suggestion of Dr. W. T. Cathell's recent contribution to medicine, we are offering to the profession Eff. Kissingen and Eff. Vichy as a convenient and economical method of administering these remedies, while the advantages over the natural waters lie in the fact that each dose is accurate and is composed of fresh water.

DOSE.—Heaping teaspoonful Eff. Kissingen, after meals, alternating every other day with same doses of Eff. Vichy.

We also put these remedies up in the form of an Effervescent Tablet, two tablets being one dose. To be taken after meals.

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Lithia Citrate, 5 grs.
Potass. Bicarb., 15 grs.
Soda Bicarb., 10 grs.
Acetanilid, 3 grs.
In each dose or two teaspoonfuls.

Lithia Salt Alkaline affords a most excellent means of ridding the blood of an excess of those acids upon which the above diseases depend.

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NO GRIPING
NON-IRRITATING TO
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Aloin, ¼ gr.
Ext. Bellad., ¼ gr.
Strychnine, 1-60 gr.
Ipecac., 1-16 gr.
DOSE—I to 2.

Pil. Peristaltic Mercurial

(W. R. WARNER & Co.)

Same formula as Pil. Peristaltic, with 1-10 grain Calomel added.

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THIS preparation (sometimes termed "Digestive Fluid") contains in an agreeable form the natural assimilable principles of the digestive fluids of the stomach, comprising Pancreatine, Pepsin, Lactic and Muriatic Acids.

The best means of re-establishing digestion in enfeebled stomachs, where the power to assimilate and digest food is impaired, is to administer remedies capable of communicating the elements necessary to convert the food into nutriment.

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Phosphorus, 1-100 gr.
Ferri Carb., 1½ grs.
Asafetida, ½ gr.
Ext. Sumbul, ½ gr.
Ext. Nux Vomica, 1-10 gr.

Dose-2 tablets before meals for adults.

BY glancing at the above it will be seen that in Nervitone Tablets we offer a combination of well-known nerve tonics and stimulants. It is a tablet that will cover a wide field of usefulness in physicians' prescribing. When the indications are for a prescription to correct conditions due to asthenia, neurasthenia or nerve exhaustion, whether the result of debilitating diseases or excesses, we have in Nervitone Tablets a remedy which will give satisfactory results.

The drugs used in the manufacture of this pill are pure and active.

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Pil. Digestiva

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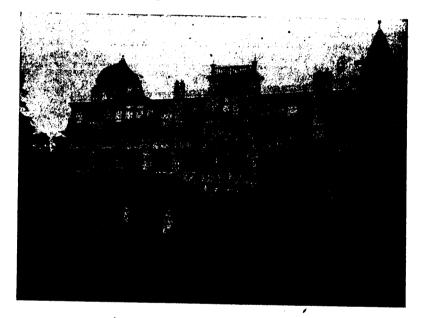
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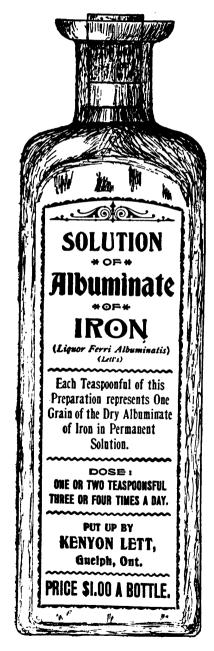
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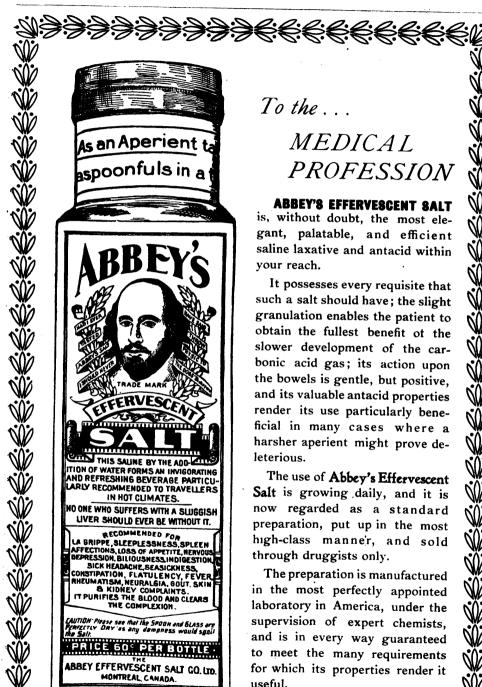
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Emulsion of Pure
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