CHOLERA INFANTUM:

AND ITS SEQUELÆ

CONVULSIONS,

DIARRHŒA AND DYSENTERY.

By WM. C. RICHARDSON, M. D.,

ST. LOUIS, Missouri.

Editor of the Obstetrical Department of the *American Observer*, Professor of Diseases of Women and Children in the Homœopathic Medical College of Missouri, Member of the Western Academy of Homœopathy, etc., etc.

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TO THE SUFFERING INFANTS.

To whom I devoutly and sincerely hope it may be of benefit, I most reverently dedicate this humble effort in their behalf.

WM. C. RICHARDSON.

Published at office *American Observer*,
Detroit, Michigan.

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PREFACE.

It has long been a matter of regret to me that Homœopathic Medical Literature, was so entirely devoid of any special treatise on a disease so universal and frequently met with as CHOLERA INFANTUM.

Even the text-books on diseases of children are singularly indefinite and unsatisfactory on this important subject; the only source of really practical information we have, is scattered throughout the various periodical publications of the last decade; it is but a comparatively small number of physicians that do or can possess all the journals, and even if they did the difficulty, all are so well acquainted with, of finding at once what one wants in the midst of so much foreign matter, is so great as to make this source of information almost inaccessible to the busy practitioner.

For the above reasons, I offer to the profession this little work on *Cholera Infantum*, and its most frequent sequelæ.—Through its pages I recommend only that which by a large experience, I have found to be the most satisfactory manner of treatment—offering *only* that which I believe or know to be good. With a firm belief in the immutable law of *similia*, and owing allegiance to no sect, I disclaim now and forever any quarrels with the adherents either of crude or infinitesmal medication.

THE AUTHOR.

No. 3236 North 10th Street,
ST. LOUIS, Missouri.

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CHOLERA INFANTUM.

No physician, I believe, will dispute me when I make the as it may seem the astonishing assertion, that one-third of *all* deaths occurring among children under three years of age, are caused by cholera infantum and its sequelæ.

Among the people it is customary to designate every case of bowel disease occurring to children, whether it be an indigestion, inflammation, or any one of the other numerous intestinal disorders that childhood is peculiarly liable to, as *summer complaint*, and physicians, unfortunately have fallen into the same general error, only desiring to appear less vulgar and more mystical in their expression, they make use of such high sounding, technical, and as their imagination leads them to believe, more comprehensive appellations of cholera infantum, tabes-mesenterica, marasmus, &c., which if anything, are far less appropriate in a majority of instances, than grandmother's simple, and to a partial extent expressive designation of summer complaint.

Now, what are we to understand by the appellation of *cholera infantum?* Simply nothing more or less than what is expressed—*cholera of infants*, and not by any means a diarrhœa, dysentery, uræmia, or as some would have us believe, gastromalacia! My intention in thus particularly trying to impress upon the mind of the profession what cholera infantum is not; (farther on I shall endeavor to show *clearly* what it is.) is my honest conviction, that did physicians give more attention to the diagnosis of infantile disease, the treatment of this class of maladies would accordingly become more rational and less routine than it now lamentably is, and consequently the little innocents would have the benefit of properly selected

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and appropriate remedies—the frightful and seemingly unaccountably large mortality list would be greatly diminished; parents would be doubly grateful to the physician who gave the same careful attention to their babes that he did to the older but no more esteemed members of their family, and physicians themselves would feel a deep, though perhaps inexpressible consciousness of satisfaction on not being called upon so frequently to sign mortuary certificates.—Right here I cannot forbear quoting from Dr. J. W. Thrailkill's most admirable little "Essay on the Cause of Infant Mortality,"—he says :—

"The physician occupies a peculiarly responsible position in society; one that is not well understood nor appreciated.—The patient sins against nature by disobeying the organic laws—those laws established by the Creator for the regulation and government of this physical existence. After the sin has been committed, and the patient feels the infliction of the penalty (that is the disease,) coming on him, the physician is sent for to reprieve him from the punishment. The physician thus becomes the mediator between the sinner and the offended law, and offers as a propitiation for the sins of his patient the means which bounteous heaven has so munificently bestowed for the purpose, in the shape of remedies. Hence, the true physician is the servant of the Divine Master, interpreting His will in the great book of nature before us, and dispensing out his blessings to many an unworthy sinner. But in the case of the child the parents are morally responsible for the sins committed against nature's laws, although the penalties fall upon it alone. The physician in thus assuming the functions of an interpreter of nature and a dispenser of her blessings, often takes into his hands the reins of life and death, and should feel the high order of the responsibilities resting upon him."

From the extreme susceptibility of the infant constitution to the action of both disease and medicine, the responsibility of the physician is much greater in treating this class of patients than it is in the treatment of adults. The life-power of

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the infant, compared to that of the adult, is as a candle to a blazing furnace. The one may be blown out by a blast which would but serve to increase the other's heat. Hence the necessity of treating these little beings with the greatest circumspection and the mildest and gentlest medicines. The physician may fire away at his adult patients with all the artillery of the apothecary shop, day after day, and week after week, and nature will finally come off victorious, and restore the patient in spite of the disease and the treatment, and the physician will get all the glory of the victory. A little anecdote will illustrate the practice of some physicians admirably.

Two men were riding together along the road, one a little in advance of the other; the foremost man rode under a swinging limb of a tree; as he did so, he caught it, and pulling it after him as far as he could, then letting it go, it flew back and knocked the hindmost man from his horse. He got up, badly hurt, thanked his companion, and told him that if he had not held that limb as long as he did it would have killed him.

Just so do many physicians get the credit of saving their patients lives by almost killing them. However much undeserved reputation physicans may gain by such practice among adults, it proves a blighting ruin to little children. Even those it does not send to the grave, often have implanted in their very vitals the seeds of some lasting infirmity."

CAUSES.

Cholera infantum is similar to the cholera morbus of adults, inasmuch as it is like the latter, usually most prevalent in an endemic form during the warm season, and especially during hot damp weather, and is precipitated by impure vegetables any indigestive or irritating substances partaken of by the nursing mother or the child itself.

Whether cholera infantum, cholera morbus, or even epidemic cholera be dependent on atmospheric spores, germs, or an inadequate supply of ozone in the air, will not be discussed here, especially since there has been so great a variety of opinions on the subject in scientific circles and as we have no positive

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proofs *pro* or *con* ; it may, however, *en passant*, be remarked, that it is a fact well known and admitted by every observant practitioner, that at least the two former disorders, whatever the immediate or exciting cause may be, are invariably found to occur in greater frequency during those seasons that are characterized by frequent showers of rain followed by hot sunshine, or in other words, seasons that are peculiarly well qualified for their favorableness to rapid vegetable decomposition.

Among the remote causes of cholera infantum, it may be well to mention violations of respiratory laws ; this may appear a little *far-fetched*, but as farther on I shall satisfactorily I believe, show that the disease under consideration is *dependent* on a decomposition or a disintegration rather, if you will, of the blood, it will be very easy to comprehend how an impure atmosphere inhaled into the lungs, the purifying chambers of the blood can lead to cholera infantum. We all know that physicians in crowded cities where the air is necessarily injurious, after failing to cure cases of this disease, invariably and almost always with good results, send the little sufferers to the country,where it is nothing but the pure air, and perhaps a change of diet that effects a cure that no amount of medication could do.

I shall again quote from Thrailkill—"Most persons (and he might add physicians) have a vague idea that it is unhealthy, especially for children, to breathe an impure air ; but very few know anything more about the matter than this. What constitutes pure air and the purpose it subserves in sustaining life, and also what constitutes foul or impure air and the sources that give rise to this and the evils it engenders to health, the vast majority of the people are about as ignorant of as 'the man in the moon.'

The chief sources of impure air in cities are animal and vegetable substances in a state of decomposition, and the unhealthy qualities which the air acquires by its stagnation in confined places. All organic substances, that is everything of vegetable or animal origin, as soon as life is extinct begins to

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decay, to decompose, to pass back again into their original simple elements, from which the life-power drew them by its organizing force. During the process of decay, many substances become volatilized and float about in the air as gases. These gases when breathed or absorbed by the skin, become detrimental to health in various ways, depending on their quality and quantity. They may disturb the healthy equilibrium of the air, either by diminishing its free oxygen, by forming new compounds with some of its elements, or by simply mingling with it a foreign substance. Heat and moisture hasten the processes of decomposition and volatilization ; hence, it is that the air in cities is much less pure in summer than in winter.

The poisonous qualities of decaying substances cannot be measured by the amount of odor they emit. The vulgar notion prevails that a decaying substance cannot be detrimental unless it stinks. It should be borne in mind that the most deadly atmospheric poisons produce no perceptible impression on the senses. Their presence is only known by their toxical action on the system. In fact, those substances that emit an odor give off their particles in so gross a form that they seem to deteriorate the air, either by simply diluting it so that the same volume contains less life sustaining element, or by uniting with its oxygen and thus generating carbonic acid and other detrimental compounds; while more deadly miasmas and contagions are so attenuated as to pervade the air without disturbing its elements, as electricity pervades gross matter.—Air soon becomes unhealthy by stagnation even as water does.

Children kept in-doors during the winter, in dark, overheated, ill-ventilated rooms, die by the heats of summer. It is my opinion that one of the chief causes of cholera infantum in our cities during the summer months originates in the bad management of children during the winter. This bad management consists in keeping them too much confined in ill ventilated, over-heated and frequently foul rooms. By this treatment they become so enervated that the heats of sum-

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summer destroy them by this terrible disease. That it is not the action of the solar heat alone that produces this disease is evidenced, by the fact, that it is actually less prevalent in the south than in the north. There is actually less mortality from cholera infantum in the cities of Charleston and New Orleans than in New York, Philadelphia and St. Louis—the winters being so mild in the South that children are not kept confined in-doors so constantly, nor for so great a length of time as they are during the winters at the North. Therefore they are able, in the former situation to withstand even a greater heat with less mortality from the disease."

Cholera infantum attacks in preference usually, first,children that are characterized by being large, fat, and to all appearances the very ones that one would think should escape it—indeed, their constitution and health to all outward appearance is excellent; but they are really far from being in a healthy condition, for their seeming robustness is in the highest degree artificial, and the result of a systematic swill feeding, whether it be from nourishing them with milk obtained from cows that are fed on brewery slops, as is done by all, or nearly all dairymen in our large cities, and their vicinity, or by the mother allowing herself to be argued into the equally pernicious belief that lager-beer, the refined slop of the brewery, will increase the amount and improve the quality of the secretions of the lacteal glands.

I say, the mother permits herself to be argued into this belief, advisedly, for her natural taste instinctively, in nearly every instance leads her to abhor the (to her) vile stuff; and it is only after long perseverance and great effort to overcome natural disinclination, in most cases, that she can accustom herself to drink it at all. Beer may be well enough in its proper place, but experience and analysis have satisfactorily proven beyond a doubt, that its place is not the stomach of the nursing mother. Thus we see that large, artificially nourished children furnish the most numerous victims to this disease.

Among children peculiarly predisposed to cholera infantum, we find secondly, children that are born of diseased and ener-

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vated parents, who are not possessed of vital force enough to sustain their own crumbling organisms, much less furnish the vital animus upon which infants are principally sustained during the first year or two of their existence, and it is among this class of scrofulous, rachitic children that cholera infantum if not so liable to attack, as those first described as being poorly nourished, is more fatal and tedious to treat.

Cholera infantum, owing to the irritated and excitable condition of the whole system during that most critical era of a child-life, is peculiarly obnoxious to children during the period of dentition. In fact, it is safe to say, that it numbers three-fourths or more of *all* its victims from among children between the ages of nine months and two years, or in other words—the period of dentition. It is especially liable to attack those who are in the least constitutionally predisposed directly after weaning.

In nursing children, a return of the menses will not unfrequently act as an exciting cause; mental agitation, impropriety in diet, purgative medicines, etc., are exciting causes, acting through the maternal parent.

Having thus very briefly referred to some of the most principal conditions favorable to the causation and development of *cholera infantum*, I shall at once pass to the symptoms.

SYMPTOMS.

The child is, to all appearances in the majority of cases, well up to almost the moment of attack; in this differing from the epidemic cholera of adults, in the absence of the premonitory diarrhœa or cholerine which usually precedes Asiatic cholera, and resembling more closely the cholera morbus of older persons in the suddenness of invasion, and also in the endemic rather than the epidemic character of its prevalence. This, however, is not invariably the case, for sometimes the disease is preceded by uneasiness and general malaise, but taken all in all, by far the greatest number of cases are without any well defined symptoms of premonition.

The child suddenly commences to vomit and purges copi-

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onsly without any seeming effort or pain, the surface of the whole body is all at once overspread by a peculiar waxen palor; the extremities become cold and clammy, with the exception however, of the head which is usually hot, as is also the abdominal surface, and occasionally the face may remain flushed ; the eyes are sunken in the head and encircled by dark rings ; the þreathing is short and hurried, and the breath seems cold, in this regard resembling adult cholera ; the face is flushed and shriveled ; the nose becomes more pointed ;— the whole muscular system is greatly relaxed ; there is a complete lack of energy on the part of the child, so much so that it will not change its position except to take water, or toss or roll about in a listless, aimless, despairing manner. The pulse is peculiarly unstable or intermittent, sometimes it may be full and bounding, at others quick and wirey, or again it will become very feeble and almost imperceptible, but it is always invariably rapid and never, in the last moments even, becomes slow. There may nevertheless be an evening exacerbation, but on the following morning it will be found that if the beats are not quite so frequent as on the preceding evening, they are still of greater frequency than they were twenty-four hours previous. There is great thirst, in fact it is insatiable and one of the most strongly marked characteristics of the disease, if attempts to satisfy it are made, as is usually the case by perniciously administering frequent and copious draughts of cold water or any other diluent of whatever nature, the vomiting is greatly facilitated and made to become almost incessant, causing no gagging or effort on the part of child. Food, unless it be in a liquid form is utterly refused.— The vomiting at first consists of curdled milk or any other food that may happen to be in the stomach at the time of attack, or that may be given to allay thirst during the progress of the disease, afterwards it consists of slimy froth, smelling sour and sometimes being tinctured with bilious matter, every thing is ejected and nothing assimilated.

The purging is also copious, accompanying and sometimes even preceding the vomiting,the evacuations at first being large

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and in composition and appearance dependent on the contents of the bowels at the time of attack, but the discharges soon become less in quantity but more frequent, the matter changing to a slimy or frothy, dirty white or gray color, intermingled with green—are extremely putrid, acrid and sour smelling, the matter evacuated sticks to the diaper like mucilage, after a time there may be considerable tenesmus, the little sufferer drawing up the feet and legs as if cramped at each evacuation. There may also sometimes be frequent discharges of very offensive and fœtid flatulence; the abdomen may be tympanitic, hot and excessively sensitive to the touch. There usually is a partially and sometimes a complete suppression of urine, and that which may be voided is thick, turbid, and shows traces of albumen. This has led some authors to erroneously confound the disease with uræmia. This condition may be of twenty-four hours duration and generally is accompanied by considerable restlessness, which the little sufferer manifests by its rolling and tossing about, placing the hands frequently on the head and moaning in a manner most piteous to see or hear; after a time this uneasiness is superseded by a kind of somnolent stupor, or in other words, a collapse, which is disturbed by frequent starts and tremors that may even, and often do amount to convulsions; the little patient may readily be aroused from this comotose condition and consciousness is always found to be unimpaired; which is not the case in hydrocephalus, and is a diagnostic point of great importance.

The above comprises the usual symptoms and course of the disease; there are, however, many cases to be met with in which the malady assumes a sub-acute form, and all the above enumerated symptoms in a less violent though none the less dangerous form, are continued throughout a period of several days or even weeks—again there is a great liability to frequent relapses.

If death does not take place during the first onslaught of the disease, as is indeed too often the case where there is debilitated or pampered constitution for it to work on, or under

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mismanagement and heroic treatment; the disorder may now subside into a rapid convalescence and the return to health will. be as speedy and sudden as was the occurrence of the attack Again it very frequently happens that the vomiting gradually ceases, the nervous system recovers slowly from the shock, the child rallies and regains partially its former strength, but a debilitating diarrhœa or dysentery remains to run a subacute course and finally if not properly treated becomes chronic, which condition is casually and quite appropriately designated as marasmus or *summer complaint.* This diarrhœa, or dysentery as the case may be, is very telling on the frail and immature little body, causing it to waste away rapidly, and taken altogether it is perhaps one of the most annoying difficulties peculiar to childhood that the physician is called upon to deal with.

Taking into consideration the fact that it is so familiar to every physician in general practice, I shall not attempt to enter into the protean characteristics so peculiar to it, but shall satisfy myself by giving some of the most frequently met with and prominent symptoms. In nine cases out of ten it is occasioned by irritation of the whole alimentary canal, caused either by the use of astringent or other injudicious remedies employed to abort the disease in its earlier stages. This irritable condition is often neglected and fostered by improper diet and bad medication until inflammation and ulceration of the intestines has taken place, which soon puts an end to the little sufferer.

Gastromalacia or softening of the stomach, another almost irremedial difficulty may and often does result from the same cause. The alvine evacuations are capricious as regards frequency and varied in character, sometimes being diarrhœic, at others markedly dysenteric; the child is very irritable, fretful, languid or drowsy-like; the appetite is also capricious, there being sometimes almost a complete absence of any desire to partake of any food, again there will be canine hunger; the abdomen is puffed, hot and sensitive to the touch; the head, especially the occipital region is hot, there is a constant, some-

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times however, intermittent feverish condition, cold extremities and great emaciation.

CONVULSIONS.

During the acute form of cholera infantum as before stated, convulsions are frequently met with and often they will be found very violent and intractable to ordinary treatment; this is especially true if the disease should be diverted from its natural course during the earlier stages of its progress by means of violence, that is in other words—if the vomiting and purging are arrested by the administration of any drugs the action of which is to plug up, if the expression is admissible, the alimentary canal, thus preventing the excreta from finding a natural outlet, and causing them to seek some other place of deposit, the result will almost invariably be convulsions. The consideration of this phase of the disease lead us to its

PATHOLOGY.

Now I have a theory in regard to these convulsions, which if correct, and admitted so to be, will I most confidently believe prevent every physician from attempting to stop suddenly the evacuation peculiar to this disease.

To begin, let us first consider *what* the evacuations of the cholera infantum consist of, surely not of any food or drink partaken of by the child, for this is all expelled in the earliest stages by the first three or four discharges, but notwithstanding this the flux still goes on, and that too even if water and all other kinds of drink or food are entirely withheld, but of course their frequent liberal administration which is usually permitted greatly increases the quantity discharged.

It is I believe, almost universally acknowledged that the so called rice-water evacuations of Asiatic cholera and sometime cholera morbus after a time are composed principally of serum from the blood, which owing to the loss of nerve force and power of contractility in the vessels, coupled with a general relaxation of the whole vascular system, is poured out or we might say, drained off very rapidly. This is likewise true of cholera infantum.

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Now, arguing *a priori*, what is more reasonable than to infer that if the natural channels of outlet for this excretion, if I am permitted so to designate it, be dammed up, which stoppage of flux no one I think will venture to say arrests the process of seral drainage from the blood, but on the contrary we believe it goes on and seeks some other place or cavity of deposit than the alimentary canal which has been forcibly denied it; the question now is, *where* will it find a place of lodgment? For my part I am satisfied and think it cannot appear but plausible to others, that the fluid under consideration finds its way to the spinal and cranial cavities where its presence acting as any other foreign secretion would produces irritation, compression,and finally convulsions! Even in many cases where the secretions are not diverted or arrested, the quantity poured out is so great that it not only keeps up the vomiting and purging, but also finds its way into the cavities containing the great nerve centres, producing irritation and convulsions result.

In support of this theory I may be permitted to adduce the fact, that a great many cases of infantile paralysis occur immediately after an attack of cholera infantum, especially where the disease has been accompanied or followed by convulsions. The paralysis manifests itself directly after the cessation of the convulsions—the modus operandi being thus: the brain and spinal cord have, as it were become accustomed to the excitement and irritation of the enveloping deposit that aroused them to such a state of convulsive activity, and now suffer only the constant but not increasing (since the disease spends its active force in a short time) pressure from the unnatural secretion, or rather excretion that surrounds them and occasions an incapacity to perform the proper functions of their office, hence the paralysis.

It may not be amiss here to suggest, that children who are characterized by the possession of large heads, and who have a constitutional tendency leading toward the development of hydrocephalus may, and in all probability do often have convulsions and even paralysis arising from the deposition in the

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cerebral and spinal cavities of the fluid under consideration, without the occurrence of any more violent symptoms such as vomiting, purging, &c., of cholera, there being only slight intestinal irritation coupled with looseness of the bowels to indicate the character of the disorder.

I may here appropriately perhaps state, as not altogether foreign to our subject and partially confirmatory to the theory advanced, that during the prevalence in St. Louis throughout the winter and spring of 1873, of the terrible epidemic of cerebro-spinal meningitis, I observed in numerous cases of that disease that there occurred a copious deposit of seral fluid, in the synovial sacs enclosing the knee and elbow-joints, which was doubtless occasioned by the meningeal inflammation having been extended to these membranous sacs which are well known to be closely related in structural formation to the membranes which were the original seat of the inflammation. I also remarked that where this, as it might with propriety be designated vicarious deposit took place the patients almost invariably recovered from the attack, and that too without any symptoms of the paralysis that, as is so well known, frequently accompanies the convalesence following this disease, which paralysis beyond a doubt is occasioned by a copious deposit of fluid in the cerebral and spinal cavities as a result of the meningeal inflammation.

I could enumerate, did I deem it necessary so to do, in support of this theory, several cases of cholera infantum accompanied or followed by convulsions that very evidently were the result of an exudation; however I shall confine myself to the narration of one very strikingly characteristic and typical case which occurred in my practice during the summer of 1873.

At 6 o'clock on the evening of June 26th I was summoned in haste to see the child of Mr. J. C. The babe was aged 18 months, and had previous to the present attack enjoyed ordinary good health; there were however some indications of a scrofulous diathesis, it had not been weaned, but was given

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in addition to the breast food from the table. I was informed that the child had been attacked early that morning with violent vomiting and purging. It being some three miles or more from my residence to where the family were located, and as there was no messenger to be found, (her husband being absent) the mother in her fright and emergency called in an "old school" practitioner who happened to reside in an adjoining block.

Now let us see what "old regular" proceeds to do, nothing more or less than to administer some powders that I on examination found to consist of Opium, Calomel and Camphor? Now for the result of this most admirable prescription. The cholera as manifested by vomiting and purging was almost instantly arrested, and I suppose our *regular* friend thought he had made a beautiful cure; but alas for *regular* triumph! in less than three hours time from the stopping of the vomiting and purging, convulsions of a most violent nature set in—"regular" now says that the disease has gone to the child's head, which among homœopaths as well as regulars is always the excuse when this grave complication results—it satisfies parents you know, and besides it is strictly speaking true; but how does it come to go to the head? In this case as in many others, it was forcibly *driven* there by the medicines.

On my arrival I found the child in an almost continuous state of convulsions, the intermission between each convulsion being only an interval of about two minutes and-a-half during which there was a partial return to consciousness, then a return to violent convulsions which lasted during a period of from five to ten minutes. This condition had already existed several hours, and I at once informed the mother that I had but little hope of benefiting or saving the little sufferer, but nevertheless I prescribed with the view in end, to quiet the convulsive state and bringing about a restoration of the alvine evacuations.

On returning to see my patient the following morning, June 27th, I was happily surprised to find that my prescription had

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very fortunately and opportunely effected the result that had been desired—i. e., the convulsions had been banished on a return of free evacuations from the bowels. Nor was this all the change I discovered; in addition there existed, as might have been anticipated, complete paralysis of the entire right side including the face. Now *what* caused this paralysis? I think I can without fear of contradiction answer, that it was simply pressure of the fluid (that had been diverted from its natural channels of exit) upon the great nerve centres. I now leave the case by stating that after some three months treatment the patient was discharged cured of its paralysis and in general good health.

This is not an imaginary or isolated case, and with the exception of the paralysis, but one of many, that as before stated, did I deem it necessary in support of my theory, I could cite,as doubtless could almost any physician in active practice.

Where convulsions do not directly supervene from this copious exudation of serum, after a time another condition occurs that gives rise to grave cerebral symptoms. I cannot better describe this condition than by quoting from Dr. O. P. Baer in *Medical Investigator*, vol. ix., page 374. He says:

"I look upon the head troubles as simply symptomatic, *arising in consequence of the great drainage of serum from the blood*, thus leaving the crassamentum in excess, and in consequence of one sixth of the whole volume of blood of the person circulating through the head, the crassamentum must necessarily be great in excess. This contains all the carbon, fibrin, albumen; hence the great tendency to coagulation by overcoming the weakened force of the cerebral vessels. Venous action is tardy; veins look blue; serum is nearly gone. The child is anæmic—bled to death as it were, by excessive alvine discharges. The whole system is blanched, just as complete as a case of cholera Asiatica. And if you ever had a bad case of collapsed cholera to recover, the patient being intelligent will tell you of the numerous head symptoms.—Now analogy teaches us, or should teach us many things that nothing else will or can. I see my babe lie with its little eyes half-open when in sleep; its cerebellum, and indeed the whole base of the brain unnaturally warm, with tossing of the head from side to side; fontanels sunken, with moans and constant

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workings of the mouth; cold hands and feet. I know from analogy that I have a case of approaching collapse." * *

As up to the present writing I have not been able to make any post-mortem examinations of children who have died suddenly during an attack of convulsions resulting from cholera infantum or the sudden checking up of the discharges I can only bring to bear in this line the researches of many eminent pathologists who have found almost invariably in cases of death from the disease under consideration, that a deposit of seral fluid occupied the cranial and spinal cavities, surrounding and even occasionally infiltrating the brain and spinal cord.

The microscope has most satisfactorily and beautifully shown the shriveled condition of the red corpuscles of the blood, which with many other points useless to mention, could be brought forward to prove the great drainage of serum that takes place. Post-mortems have also shown that the villous coat of the intestines is raw and denuded, sometimes the denudation being only in patches, in others the whole surface is involved; the glands of Peyer and the solitary glands are softened, or even in many instances ulcerated perforations have occasionally been found, and in fact, the whole structure of the intestines is softened and in an almost disintegrating condition; this is in those sub-acute lingering, and above all relapsing cases, especially true of the stomach and spleen, and has given rise among many physicians, and some of eminence even, to the erroneous supposition that the disease was caused by gastromalacia (softening of the stomach.)

PROGNOSIS.

Cholera infantum, owing to bad management on the part of parents and nurses, and a faulty system of therapeutics, has always been a disease greatly dreaded as well by the profession, as the laity. At the present time, however, in the light of a greatly improved system of therapeutics, and a better knowledge of hygiene and dietetic rules, I do not hesitate to venture my belief that the mortality may be reduced at least one-half.

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THERAPEUTICS.

For convenience and a better understanding of the subject I shall divide the treatment of cholera infantum and its sequelæ into several sections, beginning with the cholera proper as manifested by violent and active condition of the disease in its earlier stages, and under this head will also consider the subacute and relapsing forms of the same. Secondly, I shall take up for consideration the convulsions, together with the resulting paralysis ; and finally, the chronic diarrhœa and dysentery, or so called summer complaint, will be therapeutically displayed.

I wish right here to distinctly impress upon the mind of the reader, that in considering the treatment of this disease I shall not advance any fanciful theories, or air any strange, newfangled remedies, simply for the sake of offering as a discovery something new ; this more especially since I believe firmly that the disease, where there is no unfavorable constitutional tendencies, is perfectly amenable in nearly every instance, to well proven remedies.

If I should have the good fortune, and I hope I shall, to offer anything in the shape of remedies that the profession are not acquainted with, all may be perfectly assured, that it shall only be such means as have been thoroughly tested in numerous cases, and found by a large experience to be the best adapted, in the majority of cases, to the condition for which they are recommended.

These remarks I do not offer, as indeed it may appear, in a spirit of egotism, but for the reason that every physician in general practice as well as myself, have found in consulting works on medical subjects, remedial means lauded to the skies, which no one would question might have been of great service in one, or even several isolated cases, but nevertheless, in a majority of cases were worse than useless.

Now, what is the result of such recklessness and indiscriminate praise on the part of medical authors in behalf of their favorite hobbies ? In reply to the question I will say, that physicians in busy practice are caused to lose a great deal of

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precious and valuable time by being led to try them; and the innocent patients, alas! too often lose their lives, victims to a very foolish and vain-glorious effort of some medical penny-a-liner to distinguish himself by offering something new, however worthless it may be.

I do not, by any means say this to deter any one from making discovery of new remedies and methods of treatment, but on the contrary believe in encouraging new discoveries, with the proviso, however, that they be well proven before they are offered to the world as infallible. Let us by all means confine ourselves to old and well-proven remedies, unless we have the evidence of some honest man, that the remedy offered has been proven in numerous well attested cases of the disease for which it is recommended, and not, as is too frequently the case, in one or two exhibitions where it may be very doubtful whether nature or the remedy effected the relief. Without further preliminary remarks, other than to say that I shall only give brief characteristic indications for the administration of each drug, I shall now proceed to the treatment of *Cholera Infantum.*

REMEDIES.

Veratrum Album is, perhaps, in a majority of cases, the first remedy to be called into requisition. It is especially indicated if the attack should be ushered in very suddenly by large watery discharges from the bowels, immediately followed by copious vomiting without seeming effort; cold, clammy surface, great and sudden prostration following immediately upon the extraordinary profuse evacuation.

Very great sensitiveness and pain in the abdominal region; great anguish is indicated by the moaning and tossing about of the little patient; tendency to spasms, painful contractions of the soles of the feet and palms of the hands; and finally, I may say, that the most marked characteristic of Veratrum is the attack *comes on early in the morning.*

Tartar Emetic is, in cases of sudden invasion, next to Veratrum, the best remedy. Its most marked indications are—almost incessant and profuse vomiting, accompanied by a

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short dry cough, rattling in the throat, apparent constriction of the pharynx, labored breathing, cold hands and feet, great pallor; child is drowsy, does not like to be disturbed, and *does not seem at all thirsty.*

Arsenicum Album is called for in those cases where there is violent gagging and vomiting, which, however, is not very copious—of watery, bilious, slimy, greenish-brown, or black matter; the lips are blue, cold and shriveled; the breath is cold, nose pointed, sunken cheeks; cold, dry, shriveled and bluish skin all over the body; pulse tremulous and intermittent;—small watery evacuations accompanied by very painful burning tenesmus, and *burning thirst*, which nevertheless *is quenched by very few drops only to return in a few moments as bad as before drinking.*

Ipecacuanha is also indicated by sudden paroxysms of great nausea and loathing; but vomiting, if it should occur, is very scant, consisting of mucus and bilious matters mixed with ingesta, diarrhœic evacuations of greenish yellow, slimy lumpy matter, smelling sour, and having the appearance of being fermented; face puffed, distorted, red and hot, blue margins around the eyes, paroxysms of suffocative spasmodic cough, during which the face becomes blue and the body rigid, panting breath and nervous twitching.

Cuprum metallicum. Copper is an excellent remedy where there is a tendency to convulsions from the very outset, and where the vomiting and retching are violent and seem to arise from abdominal spasms; the child is very irritable and screams violently with anger on the slightest provocation.

Tabacum. Tobacco is an excellent remedy in those cases of cholera infantum, where there is icy coldness of the extremities, with hot abdominal surface, and the little sufferer *does not seem satisfied until all the covering is removed, and the abdomen is exposed to the cold air, which seems to mitigate the vomiting and nausea, that are always incited by motion;*—deathly pallor of the face, and cold viscid sweat.

Aconitum Radix. If in the earlier stages of the attack the child has a flushed face, hot head and abdomen, fierce thirst,

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together with symptoms of great general febrile excitement I have almost invariably found beautiful results to follow the administration of frequently repeated doses of root tincture of Aconite, given in the following manner :—

Mix ten drops of the tincture in ten tablespoonful of cold water,administering a teaspoonful dose every 15 or 20 minutes, until the febrile excitement is controlled, after which some one of the previously mentioned remedies, may be called into requisition.

Camphora. In cases where all other remedies have failed, and where collapse is imminent, or has already taken place, tincture of Camphor prepared and administered in the same manner as Aconite as above recommended, will prove highly efficacious, recalling life as it were at the last moment.

With the exception of Aconite and Camphor, which according to my experience should *always* be given and prepared as in the manner above described, I have purposely avoided recommending any potency or mode of preparation, leaving it to each practitioner to give the remedies in such manner as his own judgment or experience may dictate, and this I do simply because I believe the remedies if given to the individual indications of each will do good in any potency or manner that they may be exhibited. However, it may not be amiss to state, that I have preferences for the second and third attenuations, and believe they should be administered at intervals of not less than half-an-hour.

The remedies above mentioned are those that by experience I have found most beneficial in the majority of cases ; to be sure there are many others, yet I think that nearly every curable case of cholera infantum may be brought to a successful issue by a persevering and judicious application of their virtues.

In those cases of sub-acute, lingering and recurring cholera infantum, where all the marked symptoms of the disease are present but in a mitigated or less violent form, I have found in addition to the remedies already referred to, the following to be of great utility :—

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China Officinalis. This remedy is often of great benefit in cases, where the evacuations are brownish, mixed with undigested food; the symptoms are aggravated by eating, and are worse at night; great debility, emaciation and œdematous condition of the extremities, rumbling and distended abdomen, with watery eructations and insatiable hunger and thirst.

Chamomilla Vulgaris is indicated when the diarrhœa is characterized by watery, bilious, greenish yellow, slimy discharges, nausea and bilious vomiting, absence of hunger, very little thirst; the child is restless, and is relieved by being carried about.

Ferrum Metallicum. Iron is called for when there exists a nightly diarrhœa, peculiar to the early painless evacuation of watery lienteric stools, distended abdomen without flatulence great emaciation, pale bloodless appearance of the surface, canine hunger alternating with loss of appetite.

Mercurius. The soluble or black oxide of Mercury is a grand remedy in cases that are characterised by frothy watery stools tinged with blood, and when the stools look and smell like rotten eggs, the discharges are always accompanied by great tenesmus, and there is extreme languor and trembling, with cold perspirations.

Rhubarb. The stools are large, consisting of a slimy liquid smelling sour and having the appearance of being fermented, occasional vomiting, pale face, severe colic, great restlessness, and drawing up of the legs, accompanied by screaming.

ADJUVANS.

Cold. Cold water, or indeed in some instances even ice applied to the head and abdominal surface are very grateful, and materially aid in controlling the vomiting and tendency toward convulsions.

I have also found, perhaps greater benefit derived by keeping cloths wet in a mixture of equal parts of brandy and ice-water, constantly on the head and abdomen, changing as often as they become hot and dry. When the surface is cold, shriv-

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ɔled, and collapse evidently approaching, active friction with camphorated oil is exceedingly beneficial.

Diet. If the child is not weaned, the breast-milk, in the manner directed farther on, is the best and only food admissible; but in case the child has been weaned, only light farinaceous articles of diet, such as fresh soda crackers, together with ripe acidulous fruits in season, such as orange, blackberries, and baked apples, should be permitted.

Beef Tea. Where there is a great prostration, it is advisable to give occasionally a teaspoonful of freshly prepared beef tea.

Water, and in fact all liquids, except lemonade, which I shall notice farther on, should be most strenuously prohibited, for the simple reason, that free drinking is surely followed by the immediate ejection through emesis of the liquid swallowed, and thus it will be seen, that by repeated libations the vomiting will not only be greatly facilitated, but even when it has ceased, will be caused to recur.

It may really seem,as in almost any other instance, it would be cruel to thus deny the little innocent the satisfaction of quenching its thirst, but it is only done that we may be able to save its life, and it usually will not in the majority of cases, especially if the parents or nurse are possessed of ordinary intelligence, be difficult to convince them of the necessity and judiciousness of this denial. I am fully convinced that nature does not usually make capricious and unnecessary demands; but here is an instance where, if the natural inclinations are permitted to enjoy their gratification, fatal results are very apt to be the consequence.

In the prohibition of liquids I am forced to include, in case of nursing infants the administration of the breast except at intervals of three or four hours, and then the child must not be allowed to nurse to satiety, but only for a few minutes, at most not more than three or four at a time. The expediency of this is readily seen when we take into consideration how very little, if indeed any in many cases, of the milk can be assimilated, owing to the relaxed and inactive, or rather if yon will, revulsive action of the absorbents.

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Blackberry Syrup, or cordial diluted with water, is often an excellent auxiliary in the treatment of this malady.

Lemonade. Notwithstanding what has been said against the granting of indiscriminate permission to drink *ad libitum* in cholera infantum, I have found in *ice-cold lemonade*, made very sour with the juice of fresh lemons, and slightly sweetened with clarified sugar, a means that not only is a great boon to the little sufferer, whose thirst seems to consume him, but also a most excellent remedy for the vomiting itself, and one that sometimes when all others have failed, will put a stop to the emesis and very materially aid to restore the deranged system to harmony and tranquillity.

It should, however, as I have before stated, be made so as to contain a large proportion of juice from the fresh fruit, and never under any condition given in quantities greater than a teaspoonful at one time, which amount, however, may be given at very short intervals, say every five or ten minutes, if the patient should desire it frequently.

It is not advisable in case of nursing children to give lemonade either directly before or after nursing, since there would be a probability of the milk being curdled in the stomach thereby. Its free administration does not interfere unfavorably with the action of any of the remedies previously recommended, on the contrary, it seems to assist the proper assimilation of their remedial virtues.

CONVULSIONS.

Since violent convulsions so frequently accompany or follow directly upon the cessation of the active stages of the disease,I shall at once proceed to their therapeutic consideration.

Before giving a list of the remedies especially called for in convulsions accompanying cholera infantum, it may not be amiss to state that where there exists only tremors, spasmodic contractions of the extremities, great irritability, nervous excitement, and sometimes even well defined spasms of an internal or abdominal character,the medicines previously recommended under another heading are frequently all sufficient to quell the excited nervous manifestations. This is pre-emi-

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nently true in the cases requiring such medicines as Ipecac, Cuprum, Aconite, Camphor, and Chamomilla.

There are, however, many cases of cholera infantum, in which the cerebral symptoms are not only well marked and characteristic, but even predominate over the gastric or abdominal. In such cases I have found the following remedies are most efficacious.

Belladonna. This is the remedy where there is general convulsive contraction and rigidity of the whole body, upper and lower extremities, dark red flushes alternating with pallor, hot burning fever, alternating with chilliness and cold surface, dilated pupils, great thirst, but attempts to drink result in precipitating the spasm, involuntary evacuations from the bowels during the spasm, sleeplessness and restless tossing about between the paroxysms.

Hyosciamus. For clonic spasms, bloatedness and bluish color of the face, foam at the mouth, protrusion of the eyes, convulsions are unilateral, loss of consciousness, involuntary emissions of urine, deep comatose sleep with sterterous breathing, during the interval between the spasms, and a general hyperæmic condition.

Nux Vomica. Clonic and tonic spasms, convulsive starts, twitching and spasmodic contractions of the muscles about the eyes, lips and extremities, somnolence,involuntary screams, opisthotonos and tetanic constriction of the jaws. Sometimes when this remedy appears to be plainly indicated but does seem to act promptly enough its near relative,

Ignatia Amara, will, on being exhibited give highly satisfactory results.

Opium. Deep and comatose sleep, spasms are more violent in the extremities, particularly the upper, clenching of the hands, and entire loss of consciousness.

Stramonium. Hiccough, distortion of the face which causes a dull stupid good natured expression, red face, hot surface, sterterous breathing, violently delirous, opisthotonos, convulsive tossing about of the extremities, and suppression of the urine that sometimes amounts to uræmia.

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Valeriana officinalis, is indicated where there is great nervous irritation, trembling, twitching and spasmodic contractions of the extremities, violent colic and abdominal spasms.

Veratrum viride is the remedy where the child is anæmic, and there is great arterial excitement, hot surface and opisthotonos.

Zincum metallicum, *Apis mellifica*, *Platinum* and *Stannum*, are remedies that are peculiarly adapted to those cases of convulsions, or rather nervous irritability, that we so often meet with in sub-acute and recurring cases of cholera infantum, and also especially in those cases where there is seemingly a congenital predisposition to hydrocephaloid diseases. Digitalis purpura, is also in those cases where there is a tendency to hydrocephalus, a most excellent remedy.

And finally, in those cases where the cerebral disturbance is late in making its appearance, and the subject has had time to waste away and become anæmic, or in those cases where there is evidently neither hyperæmia or a deposit of serum to occasion the brain symptoms, but on the contrary they arise from a general drainage of serum from the blood, and such cases do occur as previously stated—then such medicines as Calcarea carbonica,Carbo vegetabilis, Nux moschata, Podophyllum, Rhus toxicodendron and Sulphur,will prove of incalculable benefit, giving directly curative results.

The above are the principal curative medicines that will be called for in nearly all cases of convulsions accompanying cholera infantum. I wish to say, however, that they cannot be expected to always act "beautifully," "immediately," "like a charm," &c., &c., as many of our over sanguine theorists, and even some of our *faithful* physicians in actual practice would have us believe. "A little faith goes a great way."

On the contrary,they most frequently will be found slow,but if given with due perseverance are very sure eventually to give relief, and we need not be at all surprised when we consider the exciting cause of the cerebral disturbance under consideration. But, the question is naturally asked—is there no means to overcome and quiet this frightful display of convul-

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sions that spreads such terror and consternation in the family and friends of the little sufferer? I say very positively, yes! and this brings us to the consideration of

PALLIATIVE TREATMENT.

All physicians know, when called upon to treat a case of infantile convulsions, whether it be accompanying the active stage of cholera infantum, or arising from any other known cause whatever, that the family and friends of the little patient, in their fright and agitated condition, look for him to do something, and that immediately, to relieve the little sufferer; now under the circumstances what does he propose to do? is he going to tell the anguished parents and distressed friends that eagerly surround and wait upon him with such great expectancy, that they must exercise patience for a time, till the appropriate curative medicine shall have time to act, a period that in the majority of cases will be extended at least calculation to several hours? I say most emphatically, no! and why? simply because if he does make such an answer, he will in all probability, and that with good reasons too, be dismissed and some other less conservative aid called in to take charge of the case.

But on the other hand, if he says to the afflicted parents with an air of sincerity and candor—be calm, your child shall be relieved, and the convulsions will be quieted within an hour at farthest, the result will be altogether different—in fact, if I am permitted the simile,it will be like "pouring oil on troubled waters," harmony and order will spring up in place of the supreme confusion which has pervaded all the surroundings, and this alone is almost sufficient to justify such a positive assertion, and the doctor's orders will be unfalteringly complied with and carried out to the very letter faithfully and understandingly, for the simple reason, that every one will be impressed, through the physician's plainly manifest confidence in himself, that he evidently knows what he is about, and means exactly what he says!

Will the physician be justified and borne out by the results in making such a positive assertion? I unhesitatingly answer,

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with the risk of being assailed by theoretical critics, who are too conservative to make use of the means themselves, that he most certainly will; and this I say because an extensive experience in the treatment of convulsions, has taught me that in nine cases out of ten,the prediction will prove true—that is, if the plan of treatment recommended is faithfully carried out. Moreover, I affirm without hesitation, and notwithstanding the protest of theoretical croakers, that no evil after effects whatever will result; but to the contrary, the way will be paved and made clear, so to speak, for the better action of the curative medicines previously recommended.

The palliative, and I might say not unfrequently curative treatment upon which the above remarks are based, without discussion or theorizing as to mode of action,etc., etc.,is briefly as follows:—

℞ Choral hydrate.
Potass bromide, - - - - ā ℥i.
Aqua pura.
Syrup aurant cort., - - - - ā ä ℥i.
M.

Of this mixture a teaspoonful is to be administered every fifteen minutes, or as often as the interval between the convulsions will permit, and to be discontinued (but may be repeated occasionally, say every three or four hours, should the tendency to active convulsions not at once disappear) as soon as the convulsions have been quieted, which as before stated, in nine cases out of ten, will be within the space of an hour, a few minutes more or less. During this time the little patient will have taken four or five doses of the mixture, each dose containing about three or three-fourths grains each of Chloral hydrate and Potass. Bromide, making in all within the period of an hour, a maximum, say of 18 grains each.

Now, at first sight, I am willing to admit, this may appear rather heroic, but notwithstanding the hue and cry that has been raised in medical circles about the ill-effects of large doses of the medicines under consideration, I have in a very extensive experience in the treatment of convulsions, never

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seen the slightest ill, much less fatal results, that could in any way possibly be attributed to such a course of medication.—Nevertheless there are occasionally cases found in which such doses, or in fact the medicines under discussion in any dose, however minute, would be contra-indicated. I refer to those cases where the circulation is sluggish or impeded, or where there evidently exists cardiac lesion, in which instances it would be criminal to make such a prescription.

TOPICAL APPLICATIONS.

Warm. Usually before the physician has time to arrive at a patient he has been called upon to treat for convulsions, the little sufferer will have been immersed in hot water, had hot fomentations applied to the abdominal region, hot cloths to the head, sinapisms to the nape of the neck, &c., &c. Now this, perhaps is all well enough, or I would say hot applications do no harm, and may even afford temporary relief during the spasmodic paroxysm, by relaxing the muscular system, and thereby reducing to a certain extent the spasm and rigidity; but as a means of preventing the recurrence of convulsions, has no beneficial result whatever.

Cold. When we take into consideration the fact, that the kind of convulsions we are discussing,usually arise from a hyperæmic condition, or an effusion of serum into the cranial and spinal cavities, it will at once be perceived that cold and stimulating applications in the treatment are not only appropriate, but quite indispensable.

I usually direct pounded ice to be placed between folds of oiled silk, or in a bladder, and if neither are convenient between folds of flannel, and placed directly over the region of the brain and spinal cord, and on top of this folded towels or napkins to prevent soiling the clothes or bedding, or if this from any peculiarities of the case or surroundings, is found objectionable, the mixture of brandy or whiskey and ice water, as previously recommended under another head, may be applied to the same regions, and will answer the purpose quite as well.

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Pieces of ice may also be introduced into the rectum, and owing to the close proximity of this organ to the place where the spinal column ends, and the large nerves that supply the lower extremity, take their exit from the spinal column, will act perhaps, in this way more promptly, than when applied externally.

PARALYSIS.

Infantile paralysis resulting from and in complication with cholera infantum, is not nearly so rare an affection as one would be led to believe from a consideration of the literature bearing on this subject. The reason that medical authors are so evasive of, and prone not to dilate on these cases is perhaps, the fact so well known, that unfortunately physicians gain very little reputation in treating them.

The paralysis peculiar to cholera infantum usually makes its appearance very suddenly, either during or immediately superceding the convulsive stage, but sometimes does not appear or several days after the violent and acute symptoms have subsided, and finally may occur where there has been no convulsions or other marked indications of cerebral disturbance. It is in a majority of cases directly dependent on the compression of the brain or spinal cord, which compression is exercised by the effusion of fluid into the cavities containing these organs, as has previously been shown under another heading.

It may be of, from several hours to as many months duration—may be partial or complete—may affect one side, upper or lower extremities, one or several organs may be involved, as the tongue, eye, etc., or the whole muscular system may be included in the attack, and it is not to any very flattering extent amenable to any known method of treatment, but does not necessarily lead to fatal results, and will, in the majority of cases, if left to nature, and no unfavorable complications occurring, eventually disappear, when the exciting cause, i. e., the effusion, has been removed: however, there are cases in

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which it may remain after the direct cause has ceased to exist.

In such cases great benefit will be derived from the judicious administration, according to the idiosyncrasies of the individual patient we have under treatment, of such remedies as the following :—

Aluminum Metallicum—when the paralysis is confined to the lower extremities, and the seat of the effusion has evidently been in the spinal column.

Arnica Montana—in cases where the paralysis is general rather than local, and the exudation has occurred in both the cranial and spinal cavities.

Belladonna, or *Atropine*—will be found of great service in hemiplegia, where the enfused liquid has been confined to the cranium.

Cocculus Indicus—will be found useful in paraplegia occuring in debilitated nervous patients, and where the circulation is impeded or sluggish, giving rise to œdema.

Dulcamara—is an excellent remedy in paralysis of the extremities upper or lower which are not devoid of sensation, but the circulation is so interfered with as to occasion a peculiar icy coldness.

Gelseminum—is indicated in complete paralysis, or rather where the muscles seem to have only lost power of contraction at the will of the patient, there being no loss of sensation or the slightest change in temperature.

Nux Vomica—this remedy will be found useful in cases of paralysis that are incomplete—that is, where the power of motion at will is not totally gone, but very much impeded by painful twitchings, and spasmodic contractions occur whenever the affected part is exercised.

Phosphorus—where the trouble is confined to the extremities, upper or lower, and originates from pressure on the spinal cord.

Plumbum Metallicum—complete paralysis, together with general atrophy.

Secale Cornutum—in emaciated subjects, if the paralysis si accompanied by a constant tendency to spasms.

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Stannum—is the remedy in hemiplegia when the paralyzed parts are constantly moist from perspiration.

There are other remedies that will be found useful in paralysis, but I will not take up time and space in giving their characteristic indications, especially since they are so familiar to all practitioners who pay any attention to Materia Medica. I refer to snch medicines as *Æsculus hip.*, *Anacardium*, *Arsenicum*, *Baryta Carb.*, *Causticum*, *China*, *Cuprum*, *Ferrum*, *Ignatia*, *Graphites*, *Oleander*, *Rhus tox*, *Stramonium* and *Zincum*.

LOCAL TREATMENT OF PARALYSIS.

Electricity. This agent is, according to my experience, one of the best available means in our possession, for the treatment of paralysis. This the more so since it can so advantageously be called into requisition conjointly with any of the medicines that may be indicated. In reference to mode of application, I cannot do better than to quote from "Braithwaite's Retrospect," Part LXVIII., page 73, as follows:—

"In the 'essential paralysis' of infancy and childhood electrization may be of considerable use if employed before the muscular tissue is too much degenerated. In this form of infantile paralysis the affection comes on suddenly, the faradocontractility of the muscles is more or less diminished; they waste, and their tissues undergo the fatty degeneration;—and they are affected by secondary contractions. Not rarely it will be found that when the affected muscles answer but little or not at all the faradic current, they will respond to a slowly interrupted voltaic current, and are even more than normally sensitive to it."

"The good that electrization can do here is to improve and to preserve the nutrition of the muscles, and so prevent wasting, degeneration and contraction; and in some cases even more than this may be done, for even if the affection of the cord can be cured, the peripheral electrical treatment may forward the cure. Where there is still response to faradism this form of electricity is the best to use. Care being of course taken not to frighten or pain the child. Where the irritability to the interrupted voltaic current is *increased*, it will be best to treat the case at first with this current. In a little time it will be found that the reaction to the faradic current is restored and that the excitability to the interrupted voltaic

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current lessens; then faradization only may be employed.—The disease is generally a tedious one, and the treatment must be continued for a very long time—for months, or years even. but so long as there is any response to electrization there is a hope of benefit."

Dr. Radcliff says, 'if the paralyzed muscles retain their electro-contractility and sensibility, and so show that they have not passed into that state of fatty degeneration into which they always tend to pass eventually, there appears to be scarcely any limit to the time in which improvement, and even recovery is possible'."

Bathing. Great benefit may be derived from a judicious application, as the peculiarity of the case may demand, of hot or cold baths, or hot and cold shower baths may be given in rapid alternation, after which the surface is to be briskly rubbed, till perfectly dry, with rough towels (not too rough, however, since the delicate integument might be destroyed, or injured, and the devitalized condition of the organ might not admit of prompt healing, which is a complication to be avoided) and afterwards enveloped in soft flannel.

The Wet Pack—is also sometimes of great utility in the treatment of this form of infantile paralysis, aud may often be employed with splendid results, especially in the earlier stages of the difficulty.

Embrocations—of camphorated oil, or what is better a glycerole of Camphor, will frequently be found beneficial, or the paralyzed parts may be enveloped in soft woollen wraps, that have been previously saturated in the camphorated oil or glycerine.

Dry Friction and Animal Magnetism—may also be employed with success—and finally, it is always advisable to keep the paralyzed parts constantly warm by means of soft woollen coverings.

SUMMER COMPLAINT.

I shall now finally direct the attention of my readers to the therapeutic consideration of that hydra-headed condition, the most prominent features of which are diarrhœa, dysentery,and emaciation; and which (as has been previously stated) may quite appropriately be designated under the above heading, i. e.—*summer complaint.*

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Without entering into a detail of the symptoms peculiar to this condition, I shall at one proceed to its therapeutics.

REMEDIES.

Where there is a tendency to diarrhœa, and when this is the predominant feature of the disease the following remedies will be found to usually fulfil all the requirements of the case.

Antomonium crudum. Is indicated in cases of watery diarrhœa, with deranged stomach; white coated tongue, loss of appetite, eructations and nausea.

Bryonia alba. When the diarrhœa is aggravated by cold drinks, or by anger and chagrin.

Calcarea carbonica. In cases where the diarrhœa has assumed the chronic form, and is especially suitable to children that are emaciated and scrofulous; other indications are, great debility, pale face, and voracious appetite.

Colocynth. Bilious diarrhœa, accompanied by violent spasmodic, colicky pains.

Phosphorus. In cases that have become chronic; painless discharges, and gradual loss of strength.

Phosphoric acid. Watery and slimy diarrhœa, with discharge of undigested substances, or involuntary stool.

Podophyllum, Petroleum, Muriatic acid, Sulphur, Graphites, Cina, Leptandra, and all the remedies mentioned under previous headings may be indicated in summer complaint, whether its most prominent features may be diarrhœa, dysentery or gastromalacia, I therefore shall give under each of these conditions a few of the most characteristic remedies.

Where dysentery is the most prominent feature, the remedies not already referred to are: *Baptisia, Capsicum, Hamamelis, Polygonum punctatum, Secale cor.,* and *Veratrum viride.*

When there is evidence of tendency to softening of the stomach—such remedies as *Argent nitricum, Causticum, Bismuth sub nitrate, Hydrastin, Nitric acid,* and *Sulphuric acid,* may prove beneficial.

Dr. T. G. Comstock, in an article on *Summer complaint* in the "U. S. Medical and Surgical Journal," vol. v., page 210, says:—

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"To manage a case of disease successsfully, will often tax all the powers of a young physician, as well as one who has years of experience, and 'grown gray in his profession.' Before giving any advice as to the medicines necessary, we wish to say that, where it occurs in large cities, a change of air for the child is advisable. If circumstances allow, it is well to send the patient to some northern climate, where the heat is not excessive. We prefer the seashore, mountain air, or near some lake, where the surroundings are pleasant and agreeable. This change will save the lives of a great many children, but in most cases, in ordinary practice, it is impracticable, as the means of the parties will not allow them to go away with their children.

MEDICINES. For the diarrhœa, if without fever, and the passages are undigested, alternation with watery stools, with nausea, furred tongue, and the attack has come on after a constipation, Antimonium crudum 3rd, may be given. Evacuations frothy, painless, but worse after eating, China 2nd.—Evacuations smell sour, breath sour, dentition retarded, abdomen bloated, child emaciated, and othe remedies have perhaps failed, Calc. carb. 2nd, In some cases where the stools were chalky, with no appearance of bile in them, especially in infant artificially reared, children who seem subject to frequent attacks of bowel complaint, we have given a trituration of Phosphate of Soda 1-5, in doses of from one to ten grains three times a day. In the diarrhœa accompanying whooping cough, in cases where the children are greatly emaciated and digestion was impaired. it has many times proved a very valuable medicine. We call the attention of our professional brethren to this remedy, and one of the principal indications of its use is where the bowel complaint has been induced from the want of a requisite variety of food.

Where the stools are serous, watery, sometimes involuntary with great pain, Oleum Crotonis. Compare also, with the last named, Elaterium. Yellowish, profuse stool, Jalapa 2nd ;—vomiting and nausea, Ipecac 2nd, Pulsatilla 3rd, or Arsenic. 30th ; vomiting and nausea, with very fœtid stools, child sinking, Kreosote 1st attenuation. This is a very important and effective remedy, useful (I may say sometimes specific) in chronic dysentery. Evacuation slimy, with straining, gums sensitive and swollen, child sweats much, and has aggravations at night, one of the following preparations of Mercury may be selected: Mercurius sol. 2nd, or Merc. dulcis 2nd.—other remedies, such as Acid Phosph., Acid Sulphuric, Podo-

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phyllum, Secale, or Veratrum, will be often indicated ; the last named may be given in profuse diarrhœa with vomiting, involuntary stools, and great tendency to a collapse ; if the child has fever, either Aconite, Belladonna, Bryonia, Rhus tox., or Gelseminum, may be selected, and in some cases, alternated with one of the other remedies.

Dr. Richard Hughes recommends Nux Vom. and Lycopodium, where there is evidently a muco-interitis. He also suggests the use of Phosphorus, Arsenic, or Phosphoric acid, for the diarrhœas which accompany the 'wasting diseases' of children. Another remedy not to be neglected, is Colocynth, for greenish stools, accompanied with severe colic pains. Chamomilla we have not spoken of, but it is the remedy in slight cases, where there is much rumbling in the bowels. In children from two to five years old, where the diarrhœa becomes chronic and has resisted all other remedies, an infusion of Cistus Canadensis (Frost-wort) will be found worthy of trial.—This 'Frost-wort' is useful in chronic dysenteric-diarrhœas of adults, as well as children. We have certainly cured a great many cases with it, after other remedies had been tried in vain. Another remedy seldom used, but often found servicable when the child is irritable and restless, showing symptoms of exhausting and a general decline, is Staphysagria.

DIET. One great cause of summer diarrhœa in young children, is that the mother, believing that she has not enough milk to nourish the baby properly, feeds it artificially, and thus deranges the stomach. A young child, until the first incisor teeth come through, does not need anything but its mother's milk. Mothers will not believe this—they nearly all insist that they have 'not enough milk,' and begin to stuff the cnild with something else ; they insist that 'the child is starving.' Now this is a very popular error, but so deeply rooted, that we seldom succeed in getting it out of the mother's head. The All-wise Being who gave the child to the mother, has, in the greater majority of cases, provided her with a secretion of milk sufficient to sustain it.

Another very popular error, which has become quite fashionable is, for the mother to insist that she must constantly drink lager beer, in order that it, the beer, shall 'make milk.'—According to Dr. Condie's statements, lager beer actually lessens the quantity of the milk. After the mother milk, cow milk is the best diet for children under six months; it should be properly diluted, and not given too strong. Condensed milk will be found appropriate, if cow's milk of good quality cannot be procured. In one instance that we call to mind, in

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a child whose mother died during confinement; the child was 'brought up by hand,' upon condensed milk, and took no other sustenance for seven months or more. This child did well, and the condensed milk proved to be a great convenience.—When children are weaned, the best diet for them is beef tea, arrow root, Liebig's food, gelatine, or carrot pap.

This carrot preparation is admirably adapted to scrofulous children. We have used it for many years, and can speak highly of it. It is good for adult dyspeptics, as well as for children. The following formula for its preparation we extract from "Bednar's Kinder-Krankheiten," page 39:—

"An ounce of finely grated carrot should be put into half-a-pint of cold, soft water, and should stand twelve hours, being frequently stirred; it should then be strained through a sieve, and all the juice pressed out. This juice is then to be thickened with grated bread or arrow root, and to be set upon a slow fire. After boiling up once or twice, it should be sweetened, and is then ready for use.

The juice of the carrot combined with water-crackers or crusts of bread, contains all the material that is necessary for the nourishment of weaned children—albumen, starch, gelatin, sugar, fat, and salt, and finally, even the phosphate of lime, and phosphate of magnesia. In the preparation of this food the greatest cleanliness must be observed. The juice must be prepared fresh every day, and must, moreover, be carefully watched, lest fermentation ensue. The large and full-grown carrots are preferable to the young and small, this article of diet is also recommended for older children suffering from scrofula, worms, and rickets, and is also suitable for patients convalescing from acute diseases."

In older children, when the diarrhœa has become chronic, the existence of worms may be a cause; if so, Santonine or cocoa-nut rind, should be given as vermifuges; but if no worms are present, then it is recommended to give the child some cider once daily, and some one of the remedies for diarrhœa above indicated may be selected.

It should be borne in mind that softening of the stomach, and water upon the brain, are complications of the summer complaint. Both affections are almost incurable, but occasionally a child recovers from the latter. The great thing in summer complaint is proper ventilation; keep the child in a temperature of about 60 Farenheit, and when the weather is intensely hot, see that it is lightly covered, and do not annoy the little thing by keeping upon it flannel garments, for they

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only assist in keeping up the irritation and enervation of the child. The child should be daily carried out in the fresh air early in the morning, and after the sun has gone down.

COFFEE IN SUMMER COMPLAINT.

Before closing this article, we desire to call the attention of our medical brethren to the use of coffee as an aliment and stimulant in this disease. We noticed an article some years since, written by Prof. Dr. F. W. Hunt, of New York from which we extract the following :—

"Coffee as an article of diet, as well as a medicine, is highly useful in the summer complaint of children. Extreme emaciation, distended abdomen, pulse small and frequent, great restlessness, imperfect sleep, with eyes half open, and convulsive motion of the eyes when awake. A teaspoonful of the ordinary infusion of coffee has arrested the vomiting, causing tranquil sleep, changed the character of the evacuations from the bowels, and improved the digestion and general strength."

Those physicians who always interdict coffee, will be surprised at the above, but our experience confirms what Dr. Hunt has so well and plainly described. Before we had our attention called to Dr. Hunt's recommendation, we had often noticed non-injurions effects of coffee in similar cases, where mothers insisted on giving it ; but after reading the above, we took occasion frequently to prescribe it, and, in a great many instances, with the best results. In some instances, children who were almost in an extreme case of marasmus, have been sustained by coffee alone, for several weeks, and have finally recovered.

It has been our practice to give it with cream and sugar ; but in some cases, we have given black coffee without cream, but sweetened a little. Dr. Ludlam has also recommended it in similar cases. In marasmus, there is a tendency to decomposition of tissue, and coffee is well known to prevent such a decomposition, and thereby it is most useful in circumstances of unusual fatigue or deficient alimentation.

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Another remedy which acts similar to coffee is Coca; the leaves are officinal. This Coca is a Peruvian plant, and can now be obtained of pharmaceutists in New York. Several years ago, we obtained some from Peru, and found it to act like a charm, in cases where digestion was weak and difficult. It is very different from and not at all related to cocoa; it has the peculiarity of producing a pleasant excitement. To children with marasmus, we have given it in a weak infusion, it is a remedy of great practical utility in cases of confirmed dyspepsia, and is especially useful for hypochondriacs. Several years ago I experimented with it upon myself. It is a most powerful and agreeable stimulant to the brain and nervous system; is especially useful to counteract fatigue of mind and body, and enable the prover to live upon at least one-half his daily allowance of food. I hope our brethren will experiment with this medicine. Its technical name is *Erythroxylon Coca*."

DIET OF INFANTS AND YOUNG CHILDREN.

Dr. J. C. Morgan in a little pamphlet on "Diet of Infants and Young Children," says:—

"Firstly: However agreeable and nutritious any diet may be to-day, rotation of the bill of fare is sure to be required at sometime, or disgust, indigestion, etc., will follow.

Secondly: The food must be composite-nitrogenous as well as carbonaceous, to supply at once flesh, fat, and animal heat. But these are to be variously proportioned in divers cases.

Thirdly: It must not appear in the stool undigested, or be vomited in a like state. Quality or quantity, either one, may be at at fault and must be rectified.

In this connection, let me say—we should always demand a daily exhibition of the diapers. Children often of indigestion, discovered only when they are moribund, perhaps, and that too when they have had but the mother's milk, abundant, agreeable even, but curdling in the intestinal transit;—showing a good hue, but closely resembling chopped or curdled eggs; the mother daily testifying that the stools are per-

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fect. A temporary abstinence from natural food, and a substitution of pure cream, or other nourishment, with the right medicine, (not forgetting the mother) may often restore the babe to the breast in a few days. If even digestion be good, quantity may overdo its action, or again, deficient supply may require to be supplemented artificially. Amongst the artificial dietetics, we find some whose normal temperature is somewhat high, as milk and cream. As a rule, food at the heat of the stomach itself is best suited to this organ, and great harm may be done by neglecting to attend to this point. In other cases, easily distinguished, nature craves and must have cooler food.

Milk is the foremost on the list, even in its ordinary state; but for all that, babes have often starved to death on it, because of not digesting it. Amongst the special articles, one of the first to be named, is *pure* cream; warmed, diluted and sweetened, or frozen, or natural, it is a grateful and nutritious substance in very many instances; sometimes a little laxative, and thus differing from the farinaceous. If frozen, it is of course to be used in very small portions, and to meet a definite craving of the patient, not a mere notion, but a real instinct, as in other cases of peculiar appetite. But cream from the cow, as well as milk, is liable to dangerous contamination by the weeds of the pasture; hence must be selected with reference thereto. How many colics and diarrhœas come by that channel, who can tell?

Cream which is illy separated from the milk, has often the same fault of indigestibility and consequent coagulation in the primæ viæ with itself. Even pure rich cream may prove unacceptable, causing vomiting; when, by adding warm water in new-born children, four parts of water to one of cream, with a little white sugar (or sugar-of-milk) it may do quite well; but the whole stock must not be diluted at once, since the process of putrefaction is thereby favored. In summer it should be preserved on ice in vessels of fastidious cleanness. If gastric irritability be marked, very small quantities of this or any other nutriment are to be given at any one time, but

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frequently, as the organ will bear it without vomiting or disgust; say a teaspoonful every half-hour. In some cases the rectum may supersede the stomach as the receptacle of food, of which yolk of an egg with cream is probably the best form, two tablespoonfuls being injected every two to four hours, for a little child. Nutrition may be maintained through many days in this manner.

But other components of cow's milk may sometimes be separately utilized. The curd separated by rennet, sweetened, or even, for older persons, the well known "schmier-kaas," or cottage cheese, with cream and salt, and possible pepper, may prove acceptable and digestible in case of géneral loathing.—Whey, the curd removed, being the residuum after treatment by rennet, contains the sugar and salts of milk, and is by no means valueless as a semi-nutritious and bland, broth-like fluid, when only such things can be borne. Into all these preparations we may presume that there enters a certain quantam of modified Pepsin, which may be expected to exert a happy calalytic influence upon the stomach, and its other contents, whatever they be. As for themselves, being already digested by the same agent, they are more manageable by the enfeebled organs, than the original milk.

The universal voice of the profession is for milk of one cow, Very well, if the milk be young, and the milkman honest(?). By young milk is meant that the calving of the animal is recent. Sometimes, the milk of one locality proves hurtful, that of another beneficial. Young cows are also preferable. Asses' milk is probably the most nearly normal of all substitutes for that of the mother; but the comparative rarity of this creature in America, renders it more a matter of curiosity to use than otherwise.

In any case, whether of choosing a wet-nurse, or a cow, or any other animal, as the source of an infants food, the age of the secretion should be less than that of the baby. That is to say, for instance, that a cow with a calf one month old, may do very well to feed a child six or nine months. An older udder, on the other hand, may but add to the causes of ina-

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nition. Wherever the casein transcends in proportion to the powers of digestion, as often occurs with an old secretion, even of the mother, mischief is inaugurated forthwith. The cure lies in its refections by the wary physician and nurse, with perhaps a little medication.

In this country, the most common substitute for the mother's milk, next to that of the cow, is goat's milk. A young secretion bears a fair resemblance to good human milk, and more frequently agrees with even a sick infant than even the best selected cow's milk. supposing it to be used entire ; as, if the digestive organs be good, it may indeed sometimes be, especially in children who have acquired some general and gastric tone, of which the forwardness of dentition is a pretty good criterion. Whatever the form of milk used, let it never be forgotten that the diaper is the final test of results, and the coagula of casein, a sufficient condemnation of the article in use, as a present diet for the particular patient, which no amount of dilution can set aside.

Condensed milk is now so common in commerce as to have become an important substitute for the recent article. Sufficiently diluted, it is certainly better than the latter,injured as it often is, by the vicissitudes of the hot season. Its character must, however, depend upon exactly the same considerations with ordinary milk. Careful selections and preparation may render it invaluable. But of this, at present, we have to run the risk. In extreme cases, a swab or teat of linen may be dipped repeatedly into cream, or any chosen fluid, and the child permitted to suck it. Even the well known "sugar-teat" (white sugar tied up in a piece of linen) with all the fear of "swallowing wind," swallowing the rag, etc., etc., which varying its use, is an occasionally valuable method of conveying nourishment ; and may contain other things besides sugar, suited to the purpose. Butter is too much of a bugbear to those who feed young children ; it is calorifacient, palatable when good, and usually digestible.

Many other articles of the infant's diet list require for preparation the aid of milk, in some form or other ; its excellence is therefore a matter of prime importance, in a very

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large number of cases. Buttermilk should not be forgotten; if sound, it may be of use in low conditions of the digestive system; it has been beneficially added to rice flour gruel.—Next to these, we naturally consider the substances known as farinaceous.

And first of these, the starches, viz: arrowroot, tapioca, sago, tous les mois, salep, corn starch. These hydro-carbons alone are calorifacient, and so far useful in that direction;—but are utterly without value in nutrition of the undue combustion and waste of these in the process of calorification.—They also allay the sense of emptiness and hunger, when other food cannot be taken. The same may be said of sugar in every form, including honey, molasses, rock candy, gum drops, etc. A dash of tea or coffee, in diluted and sweetened milk, (formerly called "cambric tea,") may have a more positive influence against waste in such cases; supposing them medicinally unobjectionable.

Mucilages, as of gum Arabic, or Irish and Iceland mosses, belong to the same category with starch and sugar; barring the iodine of the Irish, and the bitterish cetrarin of the Iceland moss. They are prepared by steeping either in cold, or better in hot water; sugar or rock candy being added if desired.

[Slippery elm bark, macerated in water, and the water given to the child to drink, is often preferable to either Iceland or Irish moss.—W. C. R.]

Gelatine or jelly, with or without wine, is comparable with the starches and mucilages. As a constituent of soup, prepared from the young shinbone of beef, (not wholly devoid of meat fibre) it may prove valuable. Pearl barley, or rice, may often be added with advantage. So also vegetables; which, for a young child should be strained out. Vegetable soup itself may be mentioned here; it is composed of all the ordinary market vegetables, in their season so far as convenient, made into a decoction and strained. Out of season, canned, or dessicated vegetables may answer. In the preparation of these, and in all other sick cookery, so far as can be, non-me-

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tallic surfaces only should be allowed in contact with the materials used. A simple method is to put them into an ordinary bowl, setting this into a sauce-pan of water, and covering the bowl with a saucer, (the "water-bath.") The water in the saucepan is made to boil; and thereby the food is duly cooked. If higher heat is required, a pan of sand, (the "sand-bath") may take the place of the saucepan of water.

Miss Beecher favors the universal use of salt in cooking.—The Germans prepare soups of many things not so used by Americans; and it may be well to learn them. Milksoup, breadsoup, etc., may be said to be soup, or porridge-like preparations of those substances rather thin, and often none the worse for that. The inside of roasted potatoes, perfectly done and mealy, prepared to suit the taste, say with butter, milk or cream, and salt will often prove good food, if no contraindication exist.

As a general rule, all fruit and vegetables have a laxative tendency; but exceptions may occur, and a mealy roasted potato is as little objectionable as anything of the kind.—Fricasseed or steamed potatoes, prepared with drawn butter, may sometimes do better, so far as delicacy of palate is concerned.

Various CEREALS hold a high place as artificial diet. Maize, or Indian corn meal, apparently the crudest of all, at times prove palateble. The white meal being finely bolted, and extremely well cooked with water, salted to taste, and dressed with cream and sugar, is usually wholesome as well as nutritious. Whole, cracked, or ground wheat, barley, rye, oats, rice, beans. lentiles, peas, in soup-like, gruel, or porridge form strained, or made into bread, and as rice,the well-boiled grain all are available, prepared with cream, butter, sugar, etc.—according to circumstances. Strained bean soup has proved "just the thing" for a child convalescing from dysentery.—Pearl barley is the crude article wholly deprived of bran, by mutual friction of the grains during the continued agitation in a revolving mill, without other change. Farina, a well-known dietetic, is flour prepared from wheat, which has been thus

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"pearled." Both of these consequently require long cooking in order to render their starchy constituents soluble. Moreover, the pearling process is wasteful of the gluten and phosphates, so needful for the nutrition of muscle, bone, etc., and which are largely removed along with the bran.

A better preparation, probably, may be improvised by an old fashioned recipe. Any kind of flour may be tied up in a cotton bag, dry, placed in a vessel of boiling water, and subjected to a long subsequent boiling. [The flour must be boiled at least four hours.—W. C. R.] The product is then subduced to anew to a powder, and may be kept at hand for use, in like manner requiring less cooking than farina, etc. It is known as "boiled flour." It has some repute as a remedy in diarrhœa, given in the form of "pap."

Hominy—(Indian corn, deprived of its siliceous exterior by steeping in lye)—if soaked in cold water over night, and subjected to long boiling, lastly dressed with butter and salt, is a digestible as well as delicate dish. But for children, the smallest hominy, *Grits*, should be used; so also, in the case of convalescents generally. The thorough cooking of these is the condition of their digestibility.

"*Mush*," renowned in verse, as "hasty pudding," or fine white Indian meal prepared by very long cooking, salted, and dressed with milk, butter, molasses, or sugar, is a well-known, and very important dietetic, often too much overlooked.

The same sort of preparation of oatmeal—"oatmeal mush"—is often preferred; and rye flour is equally in favor with others. Oatmeal is to some, when used at supper, a positive laxative.

GRUELS of the same materials are familiar. Less known, are gruels made of *rye flour* or *pulverized cracker*, or soda biscuit. "Cracker dust," ready-made for other purposes may be employed conveniently for this, and produces a very good dietetic. Unbolted Graham flour, may be used in like manner, thus securing a large amount of nutritious matter, in the way of gluten and phosphates, which are lost in preparing fine flour.

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Bran mush well cooked, is often an acceptable dessert for the well, and may be dressed as suggested above; being like other forms of bran flour, laxative to the bowels. Thick or thin, or like gruel, it may become a special diet for children.

Bran bread, or Graham bread, is valuable for similar reasons, and is, like the other forms, in favor with dyspeptics who are constipated, on account of the mechanically laxative effect it exerts. So also, bran crackers. The same may occasionally be used for children, prepared in any of the forms in which we shall have something to say directly. Bran bread pudding consist of the crumbs of bran bread, over which has been poured boiling cream, sweetened to suit.

Rye bread is suitable for rotation with other forms, or even a main diet.

Plain panada, is a primitive but often (when rightly made) very palatable diet, It should he prepared thus: remove the crust of a slice of baker's bread a day old, break it small into a hot bowl, sprinkled with sugar to suit the taste; pour over this a liberal portion of cream or rich milk, and finally enough scalding hot water to cover the bread; chop it rapidly with a silver butter knife, until reduced to a fine loose pulp, (never mash it with the side of the knife or spoon) and allow it to stand until cool enough to swallow, when it should be eaten.

Crackers. sweet or plain, or other kinds of biscuit, dry or soaked in water, or "cambric tea," buttered or not, are often invaluable. Ordinary bread and butter, bread and gravy, and the like, when moist, often afford a good nutriment for even very young children, as most mothers are aware.

Unfermented bread, and biscuit, i. e., that made of dough without yeast, but charged mechanically with pure atmospheric air—may be preferred when common bread sours on the stomach.

Bread toasted, deprived of the crust, may be treated in a similar manner, and may prove serviceable if flatulence from decomposition of food, etc., be a symptom; and also for the mere purpose of rotation. But occasionally it causes such symptoms when not already present, probably in character of Carbo vegetablis. The ordinary milk toast, cream toast, or

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water toast, with butter, may often be utilized in the case of children.

Zweiback—bread of the kind called "rusk," or "tea buns," twice baked—that is, baked in slices, susceptible of minute division with ease, and may be used somewhat like cracker dust in a gruel form, or in panada, or soups.

Sponge cake, plainly made, is something which most children relish. A similar cake is "lady-fingers." Both of these may given dry, or moistened, to almost any child, sick or well.

The youngest children, those who have no teeth, may be fed with comparatively strong food, if the mouth of a healthy person be employed to masticate it beforehand. The starchy part of the bread, crackers, etc., is thus acted on by the saliva and all substances perfectly comminuted before administration. Hence, a most important diet for a half-fed infant, sick or well, may often be found in chewed cracker, chewed meat, etc., etc.

A child may, if not voracious, be satisfied by sucking a cracker, or a tough crust of bread, held to its mouth. The same may be said of meat cut into a strip, parallel with the grain, in order not to separate in chunks. But so brittle a substance as soda biscuit should not be so used, lest, as I have witnessed, a small flake getting over the glottis, fatal suffocation occur.

Meats of various kinds are all important in many cases of artificial feeding of infants, whether in fluid or more substantial form. They should be neither too young nor too old; both are indigestible and do mischief, each in its own way.—Mature, but still young meat, is valuable in various forms.—Beef, mutton, and chicken, may serve as types of all, and may be resorted to in rotation. Salt meats may sometimes vary the list.

Common soup has already been alluded to. Decoctions of the above are familiar as beef-tea, mutton broth, or chicken tea. Farinaceous or other addenda, are sometimes employed.

Beef extract, (often misnamed beef-tea) may be prepared fresh, or its partial equivalent obtained from a roast joint when cut. It is best made in a good sized clean bottle putting finely divided beef within it, corking tightly, and boiling the bottle in water for some time. The liquid is then poured off;

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a trifle of salt should be added. Salt put in at the beginning of any such process, may become so concentrated as to render the extract or the decoction unfit for use; and even without this, the natural salines may occasionally do the same.

The concentrated beef extract so commonly sold, is, when not objectionable to the taste, of great use. In wafer capsules it may be made applicable in still other cases, perhaps. This is sold as "Liebig's Extract of Beef," sometimes under other names.

Cold infusion of beef, salted slightly, may prove agreeable as a diet drink, when such temperature only is acceptable.—The process of percolation, *a la cafe Francaise*, may be applied by non-metallic apparatus to finely divided meat, the product being kept surrounded by ice; or being finely divided and pounded in a crash cloth, it may afterwards be subjected to a strong press, a little water added to the residue and pressed again, just as in the preparation of the fruit syrups.

Meat, raw or cooked, may be scraped, so as to afford nourishment for an infant; or it may be finely *hashed*,as if for sausage. The latter may be reinforced by potatoes, etc., when not contradicated by diarrhœa. The great danger is, that the comminution may be imperfect. This must be guarded against.

Damacene preserve, consists of raw beef chopped and pounded along with white sugar, until finely comminuted. This has proved a life-saver in many instances. The one doubt of its value, lies in the possible presence of parasitic germs, (as of tænia) in any form of raw meat.

Frying, as a method of cooking is generally objectionable; but meats *broiled* or *roasted* are good; the latter, especially. A close utensil, such as a "Dutch oven," which retains every particle of vapor, is economical of the volatile principles, and hence secures the choicest product; which may then be employed in any of the ways herein alluded to. The same instrument bakes the best Indian corn bread.

An excellent temptation to appetite is found, often in a wafer of beef, the thickness of card-board,cut across the grain, carefully broiled, buttered, and slightly salted; and for a little child, very finely divided.

Stews and *Fricassees* are adapted to those who can chew, when convalescent, and to whom the peculiar flavor of a roast may be disagreeable; or, in the way of rotation, very fine hashes, may suit some who cannot masticate.

Dessicated meats, i. e., with the moisture completely evaporated, may be sometimes utilized—being easily grated, and con-

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taining in this state. a large proportion of absolute nutritious matter. This may be given like the beef-extract, in hot water or dry, in a suitable vehicle, as the wafer, or jelly, or stewed fruit, which may be punctured to insert it; small masses at a time.

Any form of meat diet is of doubtful propriety, to say the least, in typhoid fever, when the urine is without sediment.—And in ulceration of the bowels, any solid food may cause perforation, and fatal peritonitis; whilst ice-cream has killed a convalescent, by intestinal hæmorrhage.

Shell fish, i. e., *Oysters*, (rarely clams,) are often a boon.—The juice or the soup of a plain stew, with cracker, or otherwise, may be the initial form; afterwards, the tender portion of the oyster itself. In stewing, the juices should first be cooked with milk and salt, and the oysters added when it boils; letting them remain on the fire only until heated through. Thus they remain tender.

Oyster hash, very fine, made only of the tender portions of such stewed oysters may be given when that form is most manageable. Even a *fresh* oyster may sometimes be chewed very fine by the mother of a sick or badly nourished child, and prove in this state a grateful and digestible diet.

But one of the most precious hints I have ever received in the matter of diet, was derived from a half-nourished babe, in the presence of a plate of raw oysters. It made such violent demonstrations of craving for them, that the mother, holding a fine one by the tough muscular portion, allowed the child to suck the remainder, which it thus demolished in a short time; and by acting on this hint, the difficulty in the case was bridged at once. I have since repeatedly prescribed the same with excellent effect, even in adults, who, whilst unable to *eat*, could *suck* a raw oyster.

In cough cases, intestinal disturbances, etc., *white of an egg, with water*, kept cool by setting on a bowl of ice, and given in sips, is often a palatable demulcent and nourishing drink. Or if a high temperature be wished for, it may be first mixed with very warm (not boiling) water, and set in a hot water bath, on the stove or nursery lamp.

Egg soup is the same as the last, with the addition of the partially beaten yolk; and in this case a little salt will be desirable. The ordinary *softly boiled egg*, especially with bread crumbs, and a little butter and salt, is a frequently available diet for young children.

Plain custard, i. e., egg, milk, and sugar, without spices, may sometimes prove an agreeable form.

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ERRATA.

On page 31 sevententh line from top for "one dram", read half-dram.

On page 31 eighth line from bottom, for "three or three-fourths", read *one and three fourths.*

On same page sixth line from bottom, for "18", read *eight.*

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