

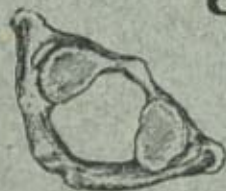
VOL. VIII

NUMBER I

The Bulletin of



Atlas & Axis Clubs



DEVOTED
TO THE



SCIENCE OF OSTEOPATHY

SEPTEMBER, 1906.

CONTENTS—SEPTEMBER, 1906

SOME CHEMICAL ASPECTS OF EXCRETION WITH SPECIAL REFERENCE TO THE ORIGIN AND ELIMINATION OF URIC ACID..... N. Alden Bolles, D. O.

OSTEOPATHIC GLEANINGS:
THE USE OF WATER AS A REMEDY..... C. S. Carr, M. D.

ICE AND THE TEETH; BILL PASSES U. S. SENATE—OSTEOPATHIC PHYSICIAN.

PATENT—MEDICINE EVIL.

EDITORIALS:
OUR AMBITION—A. S. O. CATALOGUE—OSTEOPATHY IN CANADA—McCONNELL AND TEALL'S PRACTICE; ENDOWMENT FUND; DR. BOLLES' PAPER.

ATLAS NOTES—ATLAS FIELD NOTES.

AXIS NOTES—AXIS FIELD NOTES.

REPORT OF THE MEETING OF NATIONAL ORGANIZATION OF AXIS CLUB AT PUT-IN-BAY.

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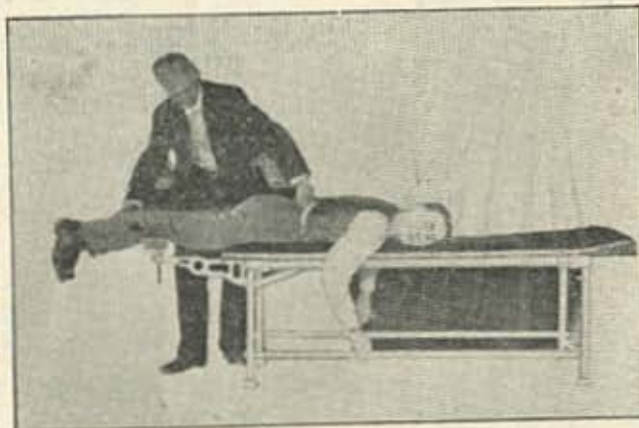
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The Bulletin

OF THE ATLAS AND AXIS CLUBS.

VOLUME VIII.

SEPTEMBER, 1906.

NUMBER 1.

SOME CHEMICAL ASPECTS OF EXCRETION WITH SPECIAL REFERENCE TO THE ORIGIN AND ELIMINATION OF URIC ACID AND UREA.

By N. A. BOLLES, D. O., DENVER, COLORADO.

INTRODUCTION.

Recent study of certain physical ailments, more particularly those of the rheumatic diathesis, make it appear probable that some of the problems of their causation and cure depend for their solution upon a correct understanding of the chemistry involved. The urine affords many valuable indices of digestive and metabolic activities, the importance of which is beyond the appreciation of observers whose point of view does not sufficiently include chemistry within its horizon.

The place accorded to urinalysis in the healing art to-day seems to include little more than the recognition of certain so-called normal and pathological conditions. The real nature of the former and the true import of the latter seem to be so little understood as to afford practically no salvation for the sufferer. It is the purpose of this article to call attention to some distinctively chemical factors affecting the subject in hand. A differentiation between these and vital activities will doubtless do much to clear the mysteries attendant upon so-called disorders of metabolism, and urinalysis be elevated to a place of well-deserved honor for the guidance of both the sick and the healthy.

Believing, therefore, that chemistry is to play an important future role, not only in the diagnosis of disease, but also especially in the recognition and correction of its etiological factors, these ideas are respectfully presented.

PRELIMINARY CHEMICAL CONSIDERATIONS.

Uric acid is a member of that class of nitrogenous organic products of animal and vegetable activities called purins. They appear to be

formed during extraordinary cellular activities, and are either stored in various parts of the animal or plant producing them, or are eliminated to a greater or less extent by emunctories adapted to this work. They have formerly been known under the class name of Xanthin bodies, and include the substances containing the purin nucleus. This consists of the atoms $C^5 N^4$, in construction somewhat resembling the two urea groups united and variously combined with oxygen, methyl, and amin making some seven or eight of these bodies. Uric acid is tri-oxy-purin.

Uric acid is di-basic; that is, it has two atoms of hydrogen replaceable by bases, as sodium or potassium. There are two urates of sodium therefore, the mono-sodium urate, acid urate, or sodium bi-urate, and the di-sodium salt, also called the neutral urate. The latter is quite soluble in urine, also in blood-plasma and lymph. The former, acid urate, bi-urate or mono-sodium urate is insoluble in water and in blood or lymph which is not sufficiently alkaline to convert it into the neutral urate. We may here well consider the properties of uric acid itself also. It is practically insoluble in water and dilute acids, and only slightly soluble in the constituents of the blood, as this fluid is constituted in most people. It appears as reddish crystals in the urine upon cooling, while the acid urate, bi-urate, or mono-sodium urate is likewise deposited in cold urine under certain conditions, as a reddish or pinkish or even colorless fine muddy sediment called lateritious deposit. Both of these often get the name of "brickdust" deposit. Both may appear in the same sample, the uric acid in this event appearing as small crystals having the appearance of Cayenne pepper, more or less scattered through the other sedimentary matters at the bottom and on the sides of the containing vessel.

Phosphoric acid is a peculiar acid in that it is tri-basic, having three atoms of hydrogen replaceable by bases such as potassium or sodium. Replacement of one by a sodium atom forms mono-sodium phosphate; also called acid sodium phosphate; two sodium atoms replacing hydrogen make the di-sodic or di-basic salt, while three sodium atoms replace all three atoms of hydrogen, making the tri-sodium, tri-basic phosphate. The two former compounds are present in the blood and urine, viz., the mono-sodium or acid-sodium salt, and the di-sodic salt, also called neutral sodium phosphate because it reacts neutral to litmus paper. The tri-sodium phosphate reacts alkaline to litmus paper, hence often called alkaline sodium phosphate. This tri-basic phosphate is mentioned here in order to more clearly define the chemical position and nature of the phosphates especially concerned in this discussion. The phosphoric acid radical or acid (negative) portion of all phosphates is thus seen

capable of taking and releasing one or more atoms of sodium or other base, as circumstances may demand. We will now view this useful power in excretory functions.

THE CHEMISTRY OF EXCRETION.—THE IMPORTANT MIGRATORY SODIUM ATOM.

The di-sodic phosphate in the blood plasma furnishes a "migratory" atom of sodium to play between the phosphoric and carbonic acid radicals, taking the latter from its sources in the active tissues, and carrying it to the lungs as sodium carbonate. Here the CO_2 escapes to the atmosphere, the sodium atom returning to the now acid or mono-sodium salt, regenerating the di-sodic phosphate. This round is constant during excretory activity of the lungs.

Fruit acids, which are easily oxidized, act when digested, in a manner similar to carbonic in the appropriating of sodium. They may take it from the saliva, the pancreatic secretion, or the blood itself, according to circumstances. This sodium atom comes from the di-sodic phosphate of the blood, reproducing mono-sodium phosphate either directly as the acid may be absorbed, or indirectly as furnished by the saliva or other alkaline fluids of the digestive tract, in the form of sodium carbonate. The fruit acid expels CO_2 , forming the corresponding sodium salt. The carbon di-oxide thus liberated in the mouth or intestines either mainly escapes, as before swallowing, or has to be retained in the digestive tract till evacuated or absorbed from the intestines in the event their walls are sufficiently supplied with alkaline blood to neutralize and absorb it.

SODIUM LOST BY FERMENTATION.

Acids produced by fermentation, either taken with food or produced by putrefactive processes in the digestive tract, are likewise absorbed in one form or the other, taking up the migratory sodium atom in the blood or lymph, and changing di-sodic to mono-sodic phosphate, which latter escapes by the kidneys. Not being volatile nor easily oxidized, these acids must, if removed at all, be received into the blood as sodium salts, and eliminated from it in some other way than by the lungs.

These two classes of salts now approach the right side of the heart either via the portal vein and liver, or via the thoracic duct, whence they are sent through the lungs in company with the systemic venous blood. It will be remembered that this systemic venous blood comes now to the lungs for expulsion of its CO_2 and other volatile acids, for the accompanying regeneration of a corresponding amount of di-sodic from mono-

sodic phosphate, and also for renewed oxygenation of hemo-globin. The salts of easily oxidizable acids will thus be converted into carbonates before arrival at the lungs if the remainder of the oxidizing power in the venous blood is available. Thus these carbonates will be at once decomposed in the lungs, restoring sodium to the blood as the di-sodic phosphate. If this power is not available, these salts will either have to await its restoration at the lungs, when this oxidation may occur there or in the arteries, or else these and the less oxidizable radicals not likewise consumed will go on the round of the circulation until the arrival at the kidneys calls the peculiar life-saving powers of these organs into action. Here any acid sodium phosphate is promptly removed from the blood, as is also any di-sodic phosphate carrying uric acid or urates as diffusible compounds. Furthermore, sodium and potassium salts of fermentative acids are also here removed as objectionable substances. Acetates, oxalates, and sulpho-cyanates exemplify this excretory action.

GREATER LOSS OF SODIUM IN PURIN ELIMINATION.

Diffusibility plays an important part in both secretory and excretory activities, and is especially to be considered here. Thus a volatile acid radical may readily part company with this sodium atom in the lungs under the influence of mono-sodium phosphate and some other force sufficient to liberate it as a gas. Salts of fermentative acids not oxidized, and urates as well, may be removed as such by the kidney if diffusibility be a property of their own. But even if gelatinous (i.e., indiffusible), they may still escape by way of the kidneys without harm to these organs if they can react with more di-sodic phosphate to form diffusible double salts. In the former case the sodium atom accompanying this radical will be the only sodium lost to the blood, while removal as diffusible double salts unavoidably takes from the blood at least twice as much of this valuable asset, and this may be to an extent of serious import, even to vital processes.

The degree of concentration of various urinary constituents appears to have a marked influence on the ability of uric acid or other purins to escape. A rather remarkable inverse ratio is noted in the comparative elimination of chlorids and purins, such that when chlorids are diminishing a larger amount of purins is eliminated, while increasing or high proportion of chlorids may be accompanied by purin retention. Discontinuance of other than fruit acids and salts in the ingesta will be followed soon by increase of purin elimination, especially in cases of epilepsy and softening of the brain; while contemporaneous discontinuance of proteids, purins and nitrogenous articles of food will be followed by

marked improvement in the symptoms. This improvement will be accompanied by increase of urinary purins, followed by gradual decline as the prescription is followed at greater length.

Urinary acidity has a similar influence. Further experiments are in progress involving those questions, in hope of still more positive results.

SOURCES OF URIC ACID AND OTHER PURINS.

The exogenous or food-sources of the purins are interesting in comparison with their endogenous sources. Some investigators have found that endogenous purins are fairly regular in the amount excreted on a given purin-free diet, and that free and soluble purins eaten in food promptly appear in the excretion to the extent of about 50% of that ingested. This seems to mean either half oxidation or half storage, and is observed under the condition of high proteid feeding, with urea excretion of 2% or more, 25 to 40 grams daily. I find that when proteid feeding is low enough to produce only $\frac{1}{4}$ to $\frac{1}{2}$ % of urea in the urine, with total excretion of only 4 or 5 grams per day, the taking of moderate amounts of purins in the food does not evoke increase of urinary purins at all early enough to justify belief that they come from those ingested. On the other hand the taking of considerable purin-free proteid food of animal origin quickly digested, causes a sharp wave of urea to appear about six to eight hours later, while still somewhat later the purins may be increased temporarily. Continued ingestion of purin-free proteids to the customary extent of 30 to 40 grams urea excretion daily is accompanied by continued purin elimination, while rheumatic symptoms appearing later in many cases point very clearly to retention of uric acid. This seems to be especially true in the use of such purin-free foods as eggs and milk. From the fact that endogenous purins are a recognized evidence of nuclear break-down from great cell activity, this sequence would indicate a strenuous demand for such extreme service at least in the liver and spleen, to oxidize and remove this proteid excess. Nuclear death of leucocytes occurring in their strenuous labor to convert proteid excess into urea, appears to be the principal origin of endogenous uric acid. The muscular sources ascribed by some authors seem inadequate, but physical exercise doubtless temporarily augments elimination of both uric acid and urea by increasing circulatory activity.

THE TRUE SIGNIFICANCE OF UREA.

We are constrained therefore to believe that urea in the urine represents DIRECT oxidation of circulating proteid—not the building of circulating proteid into cell structure and elimination of broken-down cell-

material as heretofore assumed by many physiologists. The assumption is evidently incorrect, and will have to fall if it be true that cell breakdown involving nuclear death certainly produces purins as now seems well proven. It can not be denied that the urea wave systematically follows proteid feeding after a fruit diet, whether these proteids be puriniferous or not, and that this wave is not accompanied by a purin wave in the former case, but is followed later by an endogenous purin wave after temporary increase in the purin-free proteid feeding; also that it becomes continuous when this feeding lasts for any length of time. Animal proteids were here used as facilitating the observations, by reason of more prompt digestibility and absorption.

On low diet the oxidizing power of the blood is well available. It converts these proteid meals at once into urea for excretion, which it would not do if the body needed them, for the oxidizing function must not be charged with menace to the body, in the denial of its needs.

High feeding of either proteids or carbohydrates is a burden and an unnatural tax upon the vitality. Urea excretion goes high, 2 to 6%. Uric acid is formed in abundance, and apt to be retained. Ferment acids become plentiful, with or without gas production in the stomach or bowels, or both. Not only is there this disgusting putrefaction, but absorption of these obnoxious things occurs, robbing the blood plasma and lymph of their migratory sodium and hence of their power to eliminate carbonic acid, and this of course reduces availability of the oxidizing power. Saturation of the lymph with CO_2 hinders its appropriation of oxygen from the red corpuscles, while this same saturation means inability of the CO_2 -charged lymph to exert normal taxis for CO_2 , without which oxidizing power is of little avail. The import of this in some varieties of diabetes mellitus should be evident to every student of this terrible malady.

A NEW DEFINITION OF NORMAL FUNCTIONING.

The oxidizing power of the blood should be facilitated by every natural means tending to its effectiveness, both as to the retention and the supply of the agents related to this function, and as to suppressing the conditions exhaustive of its utility. These natural means and conditions may be known by their influence upon the irritability or natural responsiveness of the function. I would here announce a principle I have never seen in any book or article on physiology, viz.: That a function is working under normal conditions when it instantly and efficiently responds to demands made upon it, and immediately returns to quiescence upon completion of the work, just as perfectly as any steam en-

gine governor or safety valve would act. A good illustration is found in a physiological instrument, the tonometer, which shows the blood-pressure upon application to the wrist or finger. It is known to be properly adjusted when the pulsations make the greatest fluctuation of the needle on the scale of the instrument.

So the oxidizing power of the blood will be known to be at its best and working under normal load when it promptly disposes of any reducing agent which may be taken into the blood-stream, and which is regularly and persistently attacked and disposed of by this function. Thus the ingestion of any substance which always calls for oxidation and either pulmonary or renal excretory action should immediately evoke efficient and decisive response by these life-saving powers. Tardiness or inefficiency in such response, leaving the patient subject to the harmful effects of the substance or drug ingested in average doses, or even in any thing less than large doses, is a sure index of overloading of one or both of these functions.

EXAMPLES OF OXIDIZING POWER OVERLOADED BY DRUGS AND FOODS.

Every person should be able to respond promptly in the oxidation of a large proportionate dose of morphine; yet it is well known that some are much more susceptible than others, and that this susceptibility varies at different times in the same individual. I believe these differences are often due to local causes of weakness in organs, but much more often due to an already overworked condition of the blood's oxidizing power through presence of proteid excess in circulation.

Many an overdose of opium has been counteracted and the victim saved by vigorous forced exercise, and artificial breathing. Snake bites have been antidoted by the early application of permanganate of potash or other good oxidizing agents upon the wound. Many organic peroxides are now known to be very helpful internally or hypodermically for destroying infections. Why should these external, foreign means of oxidation be necessary if the oxidizing power of the blood were not already overloaded by such excess and hence ineffectual in the individual or at the time such protective action is required? I answer that in all probability this oxidizing power of the blood is overloaded in handling this proteid, and that the proof lies in this very evident need for assistance to save the victim.

Let us look a little into this matter as related to some of the blood contents received from the digestive tract. One of these, usually considered most necessary, is the class of pabulum called albumins, or proteids, derived from all animal foods, nuts, legumes and cereals. They

are oxidized into urea for removal from the body, the height of the excretory tide in the case of animal proteids appearing about six or seven hours after their ingestion in any quantity. The average urinary content being about 2% or more, this urea wave is not a very marked addition to the regular level. But let a person abstain from proteids till the daily excretion is reduced to 4 or 5 grams, and then eat some easily digested puriniferous proteid as desired, at just one meal. The urinary content of urea will rise sharply as time for digestion and absorption elapses, and then promptly subside to the original level, while the run of urinary purins remains unaffected, which indicates either prompt oxidation of the latter also to urea, or prompt storage somewhere in the body.

Can any more marked evidence be demanded in support of the view that low proteid feeding is preferable? If so I will point to the frequently observed fact that fasting will cure an infectious disease quicker than any other known method. Again, fasters and spare eaters are notable for immunity from typhoid and other epidemics, while husky people and hearty livers are equally notable for susceptibility. The lesson here is: That proteid eating after maturity is a harmful and injurious habit, not a necessity in any other sense than that of the drug habitue for his favorite prescription; that this habit is to be overcome by persistent desire to get right, with only such occasionally temporary yielding as will relieve an intolerable appetite; that meats of all kinds, nuts, legumes and cereals are not necessary food for man, since we can absolutely discard them as food and still get enough proteid from fruits to make all repairs and furnish an excess for the urea production, while every index of good health, aside from the habit-longing felt by many upon undertaking rigid adherence to this diet, is conspicuous—such as clearness of mind, agility of body, desire for physical activity, "fine feelings," and freedom from everything like loginess and stupor. Loss of weight may be expected to the extent of all excess circulating proteid, and excess tissues of low vitality. But extraordinary loss of nitrogenous body material will not occur after these losses of unnecessary material have ceased, and urea excretion has once been reduced to a minimum.

The work described by Chittenden and others with reference to physiological economy in nutrition was based on nitrogen equilibrium at a maximum of circulating proteid. This present work is based upon the minimum need, which necessarily includes removal of the differences in fat and circulating proteid, as well as all abnormal connective tissue overgrowth capable of removal under these minimum conditions. The only index of starvation allowable in these tests, therefore, would be

further loss of body weight with increase of urea excretion from vital cell waste, after reduction to a minimum which must remain constant for a time while subsisting on carbohydrates and "roughness" low enough in quantity to avoid generating fermentation products in the digestive tract.

If, under these conditions, we should observe a considerable loss of nitrogenous body weight with marked increase of urea elimination (the so called starvation urea) we might admit the possibility of the assumption that vitality of essential organs was being maintained by destruction of the less essential, but not until then. We would do well to remember, however, that disuse and extraordinary overuse of muscles or other organs will either one be sufficient cause for degeneration and atrophy, with corresponding appearance of urea and perhaps uric acid also in the urine.*

CHEMICAL TESTS OF THE URINE.

I will here outline a few tests not ordinarily given in the books on urinary analysis. Total urinary purins are precipitated by ammoniacal silver solution after removal of albumin by acetic acid and then removing phosphates by the magnesian fluid of Ludwig-Salkowski. The centrifuge answers admirably for this work. Chlorids and sulphates are determined also by the centrifuge in the ordinary manner. Dilute ferric chloride added in equal volume to the urine shows most fermentation acids by a darkening of the average colors of the reagent and urine, not dispersed upon addition of just enough HCl to clear any ppt. formed. This test also shows sulpho-cyanates by the rose or red coloration. The nitric acid test does not give this reaction.

Comparison of acid phosphate acidity with total phosphates and organic salts is made by adding decinormal alkali till phenolphthalein indicator shows alkalinity (i. e., conversion of acid phosphate into the di-sodic). Then Congo red is used and titration continued with decinormal HCl till phosphoric acid is all released, at which point this indicator becomes brown or blue. Acid phosphate acidity is taken to indicate

*Since this article was written the writer has witnessed a case of three weeks' fasting in which the total urea excretion was less than 20 grams. A discharging abscess in the ascending colon during part of the time produced some loss of weight, but is making good recovery. Hemorrhages from a bronchial ulcer were induced by excitement, exercise and worry, causing increase of blood pressure. This blood remained quite liquid, only very small, scattered clots appearing. The subject is a notoriously abstemious eater and the taking of food and drink was strictly controlled by the patient's desires. The urine was in every respect comparable to that of the average person except as to amount, which was 820 cc. for the entire period. Still later advices state loss of weight to be 18 lbs. in 4 months. Food not exceeding 1 lb. per month. Abscess now discharging fully three weeks.

uric and organic acids of fermentation, which extract sodium from the disodic phosphate, creating this urinary acidity, to be regarded as abnormal. The urine should be neutral to phenolphthalein and litmus. Alkalinity to the latter indicator shows presence of ammonium carbonate, as in cystitis, or great height of the "alkaline tide." Reddening of phenolphthalein shows sodium carbonate or excess of the di-sodic phosphate in course of elimination. The nitric acid test will show neither albumin nor any kind of discoloration in the urine of a healthy patient who is not eating proteids in excess, and who is free from carbohydrate fermentation in the digestive tract.

The limits imposed by the title chosen for this paper necessarily prevent any extensive reference to the range of diseases and abnormal manifestations touched by the considerations herein presented. Suffice it to say that proteid excess in the blood, and attendant interferences with oxidizing power deeply concern the entire range of human ailments, especially including all infections, the much-dreaded tumors, all sclerotic changes, connective tissue overgrowth, excessive blood-pressure and imperfect recovery from injuries; while the formation and deficient removal of uric acid and other purins have long been recognized as important constitutional factors in the causation of most nervous and mental troubles, as well as those of more easily recognized gouty and rheumatoid etiologies. The subject has developed with such rapidity and force up to this time that one is scarcely able to satisfactorily collate observations and feel assured of correct conclusions through a satisfactory course of repeated trials. Candid discussion, criticism, and the forcible presentation of all possible objections are earnestly solicited from any one interested, in order that errors may be eliminated before any one should be led into trouble through any possible fault. Success has crowned every case which has not become discouraged and surrendered before satisfactory urinary conditions were established. There are now many happy cases reporting perfect satisfaction with the changes ordered, while the more lasting cases have seemed to be so on account of chronic nature or inability through old habits, to follow the course plainly indicated by the urinary tests used as guides.

At a later period one might particularize upon various details of the study into which this line of thought has led. At this writing it seems quite clear that most of the various items learned in urinalysis have some particular significance and relation to dietary errors and the changes to be ordered. Not only this, but the diagnostic value is evident, the abnormal conditions being revealed with clearness, and to an extent not heretofore realized because of mistaken ideas as to what are normal and what abnormal states of the urine.

THE BULLETIN

OF THE ATLAS AND AXIS CLUBS.

ASA WAMSLEY, EDITOR.

MISS KATHERINE BRODERICK, REPORTER FOR AXIS CLUB.

Entered as second class matter, Oct. 12, 1903, at the post office at Kirksville, Mo., under act of Congress of March 3, 1879.

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KIRKSVILLE, MISSOURI, SEPTEMBER, 1906.

EDITORIALS.

Our Ambition. In assuming the editorship of the Bulletin it is our desire that its present excellent standard shall be fully maintained. But we realize how necessary is the hearty co-operation of the field members in order that our desire shall become a reality. The Bulletin is a publication of which (in our opinion) every Atlas and Axis member may well feel proud, inasmuch as it occupies a prominent place as an exponent of osteopathy of the "Simon Pure" kind, and as such is contributed to by the ablest talent our profession affords.

We not only invite your valued co-operation in preparing the Bulletin from month to month, but we also remind you that the Bulletin is YOURS and therefore urge you to use it.

* * *

McConnell and Teall's Practice.

The profession at large will hail with delight McConnell and Teall's Practice, which for some time has been undergoing revision, and which will appear, we understand, about October 1st. Drs. McConnell and Teall are pioneer osteopaths and consequently have had a wide experience in the treatment of disease, a fact which will greatly enhance the value of their work. The doctors are both Atlas men.

Dr. Bolles' Paper. This issue of the Bulletin contains a very able paper by Dr. N. Alden Bolles of Denver, Colo., which was read before the Colorado Osteopathic association at its meeting in June. Since reading the above mentioned paper before the Colorado Osteopathic association, Dr. Bolles was favored with a hearing before the Colorado Chemical Society, where her paper aroused a very lively discussion.

* * *

Osteopathy In Canada. We are in receipt of the initial number of The Canadian Journal of Osteopathy, a journal which made its first appearance in July and which has for its object the dissemination of a knowledge of the science of osteopathy in the Dominion of Canada. It is neatly gotten up and is strictly osteopathic. Dr. Edgar D. Heist of Berlin, Ont., is editor-in-chief.

* * *

Endowment Fund. The movement which was inaugurated some time ago to raise money to endow an osteopathic school received a splendid "boost" at the Put-In-Bay convention. This is a most worthy movement, and it is gratifying to note that Atlas men are to the front in this as in all other important matters pertaining to the profession. Let the good work go on.

* * *

A. S. O. Catalogue. A careful examination of A. S. O., 1906-07 catalogue should convince the most skeptical of the thoroughness of the course given at the parent school. The schedule for the three year students is one that would be hard to equal and we congratulate those who are reaping its advantages. Inasmuch as we (the Atlas Club) are of the A. S. O. we take pardonable pride in its achievements.

* * *

During the past year under the able management of editor Rogers the Bulletin made marked improvement, and we deem it a pleasure to acknowledge the fruit of his untiring efforts. May his work in the field be attended with the same measure of success.

OSTEOPATHIC GLEANINGS.

The Use of Water as a Remedy.

C. S. CARR, M. D., in September Health.

In attempting to use water as a remedy, either as a drink, or as an injection, or as a bath, the temperature of the water ought to be considered as highly important.

For instance, hot water is soothing and quieting, and if used continuously it debilitates. That is true, whether used as a bath, an injection or a drink.

Atonic dyspepsia can be induced by drinking hot water continuously. The unfavorable action of hot water upon the stomach is more quickly produced by taking hot water when the stomach is empty.

Hot water as a remedy for dyspepsia or indigestion, sour stomach or pain in the stomach, is to be highly commended. A cup of hot water after meals to meet various conditions for which pepsin, soda-mints, bicarbonate of soda, and other dyspepsia medicines, is an excellent remedy.

But there are people who have got the notion that hot water taken into the stomach is a good thing, and therefore they practice drinking hot water regularly. This practice is very debilitating to the stomach and cannot fail to do injury.

The best time to take hot water, if it is to be taken at all, is after meals, or at least before the stomach is empty.

In any case of vomiting, as soon as the spell of vomiting passes off, a cupful of hot water is a splendid remedy. Cholera morbus, sick headache, accompanied by vomiting, or any sort of nausea, can be very promptly assuaged by a cup of hot water.

But hot water should be used as a remedy, and not as a habitual thing. Like any other potent remedy, hot water will do a great deal of mischief if taken day after day without intermission.

On the contrary, the habitual use of cold water is a good habit to form. It is natural to drink cold water. Cold water is a tonic to the stomach and should be taken before meals, or at least on an empty stomach. It invigorates the mucous coat of the stomach, and gives tonicity to the mucous walls of the stomach. It increases the functional ability of the stomach in every way. The practice of taking a glass of cold water ten or fifteen minutes before eating is a good one, while the practice of taking hot water before meals is a very bad practice.

The same principle applies to bathing. The hot bath is a splendid

remedy. I know of no better remedy for fever, especially in the early stages, than the hot bath.

A child is fretful and irritable; temperature is high; perhaps complains of headache, and presents all symptoms of coming down with some acute malady. It matters not what the age of the child, the hot bath to be given just before going to bed, is a good remedy. While the hot bath is being given, cold water should be applied to the head.

Quite frequently the hot bath is an excellent thing for nervousness. A full hot bath will quiet the whole nervous system, and as a remedy it can hardly be over-estimated. For sexual neurasthenia, hot water is a very potent remedy, especially just before retiring, the hot water used externally or used as an injection, will allay sexual irritation and frequently acts as a sexual sedative more beneficial than any drug.

Cold water acts exactly the reverse. It is stimulating in character. It increases the functional activity of the skin. If a cold bath be taken at all, it should be taken in the morning. If cold water is to be used as a remedy at all for pelvic troubles, it should be used in the morning, and not at night.

It should be constantly borne in mind that hot water soothes and cold water invigorates. Hot water calms, enervates, while cold water prods and innervates.

Beware of constantly using hot water as a drink, or a bath, or as an application. Hot water should be used exactly as any other powerful remedy is used. Just occasionally to meet some untoward condition, and not habitually.

But cold water can be used every day by most people with excellent results. But it is my opinion that a great many nerveless, or bloodless, or sickly people use cold water to their harm. Even cold water can be wrongly used. A great many people who undertake the practice of the cold bath in the morning do not have vitality enough to react against the bath, and instead of producing a glow of heat as it should, they are cold a long while after the bath. In such cases cold bathing does harm.

There are many invalids who cannot drink a glass of cold water at one time without suffering a chill from the effect of it. Such people should, however, persist in drinking cold water a little at a time, until the stomach is sufficiently strengthened, so that it can bear more. This should be borne in mind by people who use either.

Ice and the Teeth.

Too many iced drinks in summer have a deleterious effect on the teeth, and unless the dreaded visit to the dentist is to be the sequel to summer festivities, great discrimination should be practiced. Iced drinks should invariably be taken through a straw, says the Philadelphia Record.

Ices eaten with a spoon should be rigidly eschewed by the owner of brittle teeth. No one who wishes to ward off the day when dental accessories make life a misery should indulge in an iced drink immediately after a plateful of hot soup.

Too much tea and coffee has also a bad effect on the delicate enamel which covers the teeth, and hard brushing must, in addition, be condemned, a soft badger's hair brush being preferable in cases where the enamel coating is thin.

Bill Passes U. S. Senate.

The United States Senate has passed the osteopathic bill to create an independent board of Osteopathic examiners in the District of Columbia and it is now up to the house of representatives.

D. O.'s in every state in the Union must write their congressmen and memorialize them to enact our bill into federal law. "Teddy" may be counted on for a square deal.—Osteopathic Physician.

Patent Medicine Evil.

From a private letter sent in by an atlas brother who is using his influence in downing the "Patent Medicine Evil" the following is taken.

"We note your remarks with reference to legislation aimed against the 'Patent Medicine Evil', and are pleased to state that we fully agree with you in the position taken and the large brewers of today have joined hands and are working along the lines you mention.

Yours truly,

PABST BREWING COMPANY."

A standard beer is pure, containing from 3 to 5% of pure alcohol while 98% of all so called harmless Patent Medicines, if not a narcotic or opiate, contain from 30 to 60% of mean alcohol, which is indeed as bad or worse than "Mountain Dew" or "White Mule" of which it is said, will make a rabbit spit in a bull-dog's face.

ATLAS NOTES.

The first fall meeting of the Atlas Club was held in Atlas hall, Saturday evening, Sept. 8th. There were not many present owing to the fact that none but senior members had returned, and even all of them had not returned.

After the business of the evening had been transacted a sort of experience meeting was held, several of the members who had practised during the summer relating what they had seen and done, and how they had become more than ever convinced that Osteopathy can "deliver the goods."

Noble Skull Banker presided in his usual able manner.

* * *

Report has reached us to the effect that Dr. A. W. and Mrs. Rogers will locate in Salem, Mass.

* * *

Attention is called to the advertisements which appear in the columns of the Bulletin from time to time. We aim to advertise nothing but worthy enterprises, and are satisfied that the firms whose advertisements appear in the Bulletin will treat you courteously and give you value for money received.

* * *

Dr. Robert Coulter of Bellefontaine, Ohio, was in Kirksville for a few days the middle of the month renewing old acquaintances.

* * *

A goodly number of our bachelor brothers have joined the ranks of the benedicts since our last issue. The Bulletin extends congratulations and wishes for a long and happy wedded life.

* * *

Dr. Alfred T. Sullivan, June '06, has joined his brother, Dr. Joseph H. Sullivan of Chicago, with whom he will be associated in practice.

* * *

We are pleased to have Mr. W. H. Wakefield, of Oakland, Cal., a member of the senior class, back with us this fall. Owing to ill health Mr. Wakefield was compelled to leave school in the early spring, but he is now much improved in health.

* * *

Dr. Wm. H. Ivie of San Francisco, Cal., is at the A. S. O. taking a post graduate course. Dr. Ivie is one of the many Osteopaths of San Francisco who lost all in the disaster of last April. The doctor thought it a splendid opportunity to take a P. G. course before locating to again

build up a practice. The doctor is known as a worker and the Club is sure to benefit by his presence here.

* * *

Dr. K. T. Vyverberg, of Lafayette, Ind., who graduated in the Jan. '03 class, is taking a post graduate course at the A. S. O. Dr. S. C. Robinson of Rensselaer, Ind., has charge of Dr. Vyverberg's practice.

* * *

Dr. E. H. Cosner of Upper Sandusky, Ohio, was in town for the opening exercises of the Freshman class. The Dr. was here to introduce a new student whom he brought with him. The Dr. is the proud father of a baby girl who arrived in his home August 7th last.

* * *

Dr. Frank P. Pratt is the recipient of many congratulations from returning students these days. These felicitations are of a two-fold nature, but are chiefly the outcome of the doctor's marriage on Sept. 3rd to Miss M. F. Garvey at Rome City, Ind. Dr. Pratt has been appointed to a position on the faculty of the A. S. O., which is the further cause for congratulations.

* * *

Mr. Frank L. Goehring, an Atlas senior, is among those of our members who joined the ranks of the benedicts during the summer vacation. The happy event was celebrated on Wednesday, August 29th, when he and Miss Eva Nelson of Kirksville, Mo., were made one.

* * *

Thanks to the energy of Drs. Franklin Fiske and Carrie P. Parenteau the field members of the Atlas and Axis Clubs enjoyed a banquet at the Hotel Victory Put-In-Bay, on August 9th, in connection with the A. O. O. A. convention. About seventy-five guests were seated at the tables which were arranged in the form of a T. Dr. H. S. Bunting acted as Toast-master in a happy and characteristic manner. While the responses by Drs. Conger, A. L. Evans, Ellen L. B. Ligon and C. W. Proctor were appropriate, witty and entertaining and all present decided that such a reunion should be a feature of each meeting of the A. O. A.

ATLAS FIELD NOTES.

Dr. Lulu F. Stoltenberg, Dinnba, Cal.: "The Bulletin gets better all the time I think, and I am glad to see the Clubs grow."

* * *

Dr. J. S. Martin, Xenia, Ohio: "Enclosed find \$1.00 for this year. With best wishes to the Club and the new editor."

Dr. Garrett E. Thompson, January '06, who remained for a P. G. course, has located at Casey Ill.

* * *

Dr. Henry R. Dalrymple, June '06, has opened an office at Waukegan, Ill.

* * *

Dr. Elijah Collier, June '06, is practicing at Decatur, Ill.

* * *

Dr. Edwin R. Larter, June '06, has opened an office in 110-11 Gluck Bldg., Niagara Falls, N. Y.

* * *

Dr. J. P. McCormick and Dr. Annie McCaslin, both of the June '06 class, have formed a partnership and have opened an office at 150 Highland Ave., New Castle, Pa.

* * *

Dr. A. H. Dillabough, June '06 has opened an office at 209 W. 56th St. New York, N.Y.

* * *

Dr. Julien C. Foster, June '06 is practicing in Butler, Pa., having joined his mother who has an excellent practice at that place.

* * *

Dr. J. W. Elliott, of the June '06 class, has located in his old home, Cordele, Ga., and is enjoying a good practice. We understand that Dr. Geo. O. Baumgras, of the same class, is associated with Dr. Elliott in his work.

* * *

Dr. R. B. Johnston, London, Ohio: "I am located at London, Ohio, with Dr. Effie B. Koontz. You may address my Bulletin to 14 Elm St., London O. Regards to all the boys of the Club. Will let you hear from me later."

* * *

Dr. F. J. Eimert, Niles City, Montana: "Just a few lines to inform you that wife and self are no longer located at above address (Philadelphia, Pa.) We have just recently located in this place and our address is opposite post-office, Niles City, Montana. So far things look very promising and we are pleased with the people and the country. Regards to all the members."

* * *

Dr. A. H. Dillabough, New York City: "Just occurred to me I am in debt to the Atlas Club one dollar for a year's dues, and as I sure don't want to be scratched off the list, you will find enclosed that amount.

I suppose you would like to hear how I am getting along. So far I have no complaint to make. Still I could be working harder. But I want to tell you that you will find when you get out in the practice that the patients who come to you yield more readily to treatment than those you have to work on in Kirksville."

* * *

Dr. Reuben T. Clark, Natchez, Miss.: "We need more good D. O's in Mississippi; but they must be satisfied to come up slowly for these Southerners are a conservative people with the Missouri idea. "You've got to show me." Through the pages of the Bulletin I would be glad to have you send out a word of welcome and good cheer from the South to all who read."

* * *

Dr. C. S. and Mrs. Betts of Huron, S. D., left the middle of Sept. to visit Mrs. Betts' parents who live in Georgia. The doctor reports practice good and getting better.

* * *

Dr. E. E. Keeler has returned to Salt Lake City and opened offices, Suite 309-310 Herald Building.

* * *

Dr. G. W. Hay formerly of Garnett, Kansas, is now practicing in Ft. Scott, Kansas.

* * *

Dr. Wm H. Elmore has moved from Louisiana, Mo., to Bowling Green, Mo.

* * *

Dr. Leon B. Hawes who for a number of years has enjoyed a successful practice in Coldwater, Mich., has recently moved to Adrian, Mich., where he will have a larger field.

* * *

Drs. W. W. and Mae Vanderburgh have recently moved from Pacific Grove, Calif., to 604 Oak St., San Francisco, Calif.

* * *

The Lock Haven, Pa., "Times" contains notice of the wedding, on Sept. 5th., of Miss Mabel Virginia Thomas, only daughter of Mr. and Mrs. Asher M. Thomas, to Dr. Leland Guy Baugher, all of Lock Haven. Dr. and Mrs. Baugher went on an extended wedding tour to Buffalo, Niagara Falls, Toronto and a visit to the Dr.'s home in Illinois.

* * *

A pretty wedding took place at the house of Mr. and Mrs. J. S. Seeley, of Sheboygan, Wis., on Friday, June 22nd, '06, when their daughter,

Miss Verna Seeley, became the wife of Dr. Seba Arthur Ennis of Springfield Ill. Dr. and Mrs. Ennis are at home to their friends at 405 East Capitol Ave., Springfield, Ill.

AXIS NOTES.

The first regular meeting of the Axis Club, was held at Atlas Hall on Saturday, Sept. 15th. There was a goodly number of the ladies present and it was decided to hold the weekly meetings on Saturday afternoon of each week for the remainder of this term.

* * *

Dr. Eleanor Balfe, who has had charge of her sister's practice at Alliance, Nebraska, during the summer months, spent Sunday with relatives here. She will assist Dr. P. J. Bergen of Kansas City.

* * *

We are glad it is not customary for reporters to write editorials, and we will not regale you with an effort in that line. As many of our members have but just returned, and reports of the summer's work are not yet collected, we have little to offer in this number. We have received the official report of the A. O. A. meeting at Put-In-Bay, which appears elsewhere in this number.

* * *

Our president, Mrs. Mary L. Sims, while south this summer, called upon Dr. Rockwell of Asheville, N. C., found her ensconced in handsome offices.

* * *

Dr. Gertrude Forrest of Albia, Mo., spent Sunday in Kirksville.

* * *

Dr. Effie Rogers writes us from Maine, having spent a pleasant summer there.

* * *

Dr. S. C. Carrothers is located at Lawrence, Kansas, is enjoying a good practice and is "happy in her own hired house".

* * *

Dr. Mary Walters, resident physician, at the A. S. O. Hospital, attended the convention at Put-In-Bay, and reports an enthusiastic gathering. A particularly enjoyable event was the dinner given by the Atlas and Axis Clubs, at which over eighty members were present.

AXIS FIELD NOTES.

Dr. A. L. Conger was elected second vice-president of the A. O. A. at the Put-In-Bay convention.

* * *

Dr. Celia J. Newman has moved from Griggsville, Ill., to 442 Arcade Bldg., Seattle, Wash.

* * *

Dr. Margaret E. Messick, late of 446 S. Main St., Princeton, Ill., is now in splendid offices at 6358 Ellis Ave., Chicago, Ill.

* * *

Dr. Ella L. Meyers has moved from 209 W. 80th St., to 109 W. 84th St., New York City.

* * *

Dr. Frances M. Witmer has moved from Niagara Falls, N. Y., to Leroy, N. Y., where she will locate permanently.

* * *

Dr. Jessie B. Johnson, who for some time has been practicing at Los Angeles, Calif., has come east and is comfortably located at Lisbon, Ohio.

* * *

Cards are out announcing the marriage of Dr. Clara Brain to Dr. Fred C. Lincoln of Buffalo, N. Y., for Sept. 28th.

* * *

Dr. Amanda N. Hamilton, Greeley, Colo., sends greeting to the Axis members, "Since entering the field of active work, I am prouder than ever of being an Axis woman."

* * *

On June 7th last, there was born to Drs. H. A. and Nellie Mossman of Chadron, Neb., a boy.

REPORT OF MEETING OF NATIONAL ORGANIZATION OF AXIS CLUB AT PUT-IN-BAY.

A special meeting of the Axis Club was held at Put-In-Bay, to initiate Dr. Clara Wernicke, of Cincinnati, as a Field member.

Dr. Prater officiated, assisted by Drs. Pauline R. Mantle, Sarratt, Parenteau, Washburn and Howe.

A meeting of Field members was called by Dr. Goodspeed on August 7, at which twenty-five members were present. President Goodspeed occupied the chair and reported concerning the circular letters, sent to Field members, asking for an expression of opinion on the wisdom of organizing chapters in other schools, that twenty-six replies had been received against such action, and ten replies favoring same. In the discussion that followed, all expressions were opposed to the organization of chapters in other schools, inasmuch as the other osteopathic schools have not shown sufficient stability. It was therefore voted that the Axis Club be confined to the American School of Osteopathy.

It was voted that the National organization have an annual reunion, with a meeting that would be interesting and profitable, the necessary business to be systematized, and to occupy as little time as possible.

The following National officers were elected:

President, Mrs. A. L. Conger; first vice-president, Dr. Eliza Culbertson; second vice-president, Dr. Carrie P. Parenteau; secretary-treasurer, Dr. Martha A. Morrison.

It was voted that an assessment of 25 cents per field member be levied for necessary expenses of the National organization.

A committee consisting of the officers with Drs. Mantle, Walters and Prater, was appointed to recommend the necessary changes in the constitution, and report same at the next annual meeting.

It was voted to make the Bulletin of the Atlas and Axis Clubs the organ of the National organization, and Dr. Annie M. C. Brownlee was appointed as editor for such department.

The committee on Constitution and By-Laws met, and their recommendations will be submitted to both the Field members and the Local Club.

A very pleasant feature was the banquet of the Atlas and Axis Clubs, attended by about seventy-five members and families. Dr. Bunting acted as toastmaster and responses were made by Drs. Ligon and Conger for the Axis Club.

Much credit is due to Drs. Fiske and Parenteau for the success of the banquet and it could well be a feature of every meeting of the A. O. A.

The following Axis members attended the various club meetings:

Dr. Anna K. Alpin	Dr. Nettie H. Bolles
Dr. Bertha Buddecke	Dr. A. L. Conger
Dr. Elizabeth Crow	Dr. E. M. Culbertson
Dr. Josephine De France	Dr. Laura DeLong
Dr. Nellie M. Fisher	Dr. Julia Fogarty
Dr. Almeda Goodspeed	Dr. Mae V. D. Hart
Dr. Alice Houghton	Dr. Janet M. Kerr
Dr. Ollie A. Lynn	Dr. Ellen B. Ligon
Dr. Jessie Johnson	Dr. Martha Morrison
Dr. Pauline Mantle	Dr. Mary Noonan
Dr. Mary E. Noyes	Dr. Adalyn Pigott
Dr. Mary Pratt	Dr. Lena Prater
Dr. Emma Purnell	Dr. Carrie P. Parenteau
Dr. Sophronia Rosebrook	Dr. Minnie Schaub
Dr. Julia M. Sarratt	Dr. Katharine Talmage
Dr. Clarissa Tufts	Dr. Evelyn K. Underwood
Dr. Nellie F. Whitcomb	Dr. Harriet Whitehead
Dr. Martha Foss	Dr. Frances Howe
Dr. Mary Walters	

At a final meeting of the club, held August ten, it was voted that a Board of Trustees, consisting of five members be elected by ballot, for terms respectively of one, two, three, four and five years, said trustees being elected thereafter for a term of five years one trustee being elected each year, and that this provision be made a part of the constitution; the need for such board arising from the need of occasional resettling of the membership after members have gone into the field.

The following Board of Trustees was elected:

Dr. Almeda Goodspeed, Dr. Mary M. Noyes, Dr. Pauline R. Mantle, Dr. Nellie F. Whitcomb, Dr. Minnie Schaub.

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