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Medical Department University of Omaha.

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H. GIFFORD, M. D., B. S., CORNELL.
Professor of Ophthalmology and Otology, Omaha Medical College.
The O. M. C. Pulse.

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THE DIPHTHERIA BACILLUS.

H. Gifford, M. D.

To anyone watching medical fashions it must be apparent that the tendency to turn over the question of diagnosing diphtheria almost entirely to the bacteriologist, is becoming very much less marked. Two or three years ago it looked as though the diagnosis of this disease ought no more to be made without the use of the microscope and the culture tube than that of tuberculosis. A number of characteristics were given by which the true diphtheria bacilli could be distinguished from the false, and relying upon these, the bacteriologist turned in many diagnoses which excited great astonishment among the clinicians. But the more the germ has been studied the greater has the difficulty of absolutely identifying it been found to be. Its form and its method of growth upon various culture media are no longer considered of any great moment. The virulence which it displays when tested upon guinea pigs counts for something, but is no longer regarded as of certain significance; for not only are cultures from distinctly diphtheritic cases sometimes found to be innocuous, but cultures of similar germs, which other evidence indicates to have nothing to do with diphtheria, have been found to be decidedly pathogenic. The Ernst-Neisser method of staining, with methyl-blue and bismarck-brown, in general seems to be of value if applied to cultures of not more than ten or twelve hours growth, but exceptions to its application certainly occur so that in any given doubtful case the investigator is uncertain whether he may not have one of these exceptional cases instead of true diphtheria. The same may be said of the reaction which the germs produce in the medium in which they are cultivated. These statements are made as the result of examining the reports of a number of investigators. Nearly everyone finds something which he thinks will enable the true to be distinguished
from the false diphtheria bacillus, but there is so much disagreement that Loeffler himself admits that the only sure way to determine the question, in any given case, is to inoculate several animals with the germ in question, half of them being treated with anti-toxin, the other half not. If the vaccinated animals remain healthy and the other half die, then we have to deal with the true bacillus. This makes it plain that in the vast majority of cases the practitioner cannot afford to bother with a bacteriological diagnosis. Loeffler's plan involves too much time and trouble, and the other criterions are too uncertain. Another question raised by all this conflicting testimony as to the real characteristics of the diphtheria bacillus is as to whether the latter is not merely a variety of the pseudo-diphtheria bacillus, which is often found in the perfectly normal pharynx and in the normal conjunctival sac in great numbers, in individuals who have had no connection direct or indirect with diphtheria. If it is merely a variety, the difficulty of explaining some epidemics of diphtheria, which apparently arise de novo, becomes very much less, but the difficulty of making a bacteriological diagnosis is proportionately increased. Luckily, however, these uncertainties, while of importance from a scientific standpoint, need not embarrass the practitioner with regard to the treatment, for from our present lights he will do well to use anti-toxin in every case that seems at all suspicious.

QUERIES FROM JUDGE KEYSER.

District Court of the State of Nebraska,
Fourth Judicial District.
AT CHAMBERS.

OMAHA, NEBU., March 20th, 1899.

To the Editor of the O. M. C. Pulse:

I have just presided over two murder trials which presented several questions of interest to the medical jurist. In the first, The State vs. Hiscox, the testimony showed that the deceased was a healthy, robust man when he was killed. His body was found lying on its right side on the floor, parallel with a sofa which stood diagonally across the corner of the room, about twelve feet square. The back of the body rested against the front side of the sofa, with
the legs slightly flexed and the right arm extended by its side. A bullet had entered the deceased between the second and third ribs, directly over the right nipple, passed through the lungs, severed the innominate artery, and was found in the pleural cavity, which was filled with blood. The state claimed that he was shot while reclining on the sofa, and the defense that it was done while he was standing up and engaged in a scuffle. Was death instantaneous? Would the deceased have dropped where he stood, or would he have taken one or more steps after the shot was fired?

In the other case, State vs. Sizemore, the testimony disclosed that the deceased was last seen on Christmas Eve, more or less intoxicated, about 8 p.m. At that hour the weather turned cold, and the Missouri river closed up the next day. Four days later his body was discovered at the foot of a bank which descended perpendicularly ten or twelve feet, and then sloped off five or six feet, at an angle of about 45 degrees, to the water’s edge. On this slope was a mark which indicated that the body had slid down it. The clothing was found shoved up under the shoulders and the back bare. The lower part of the body, up to the naval, extended down into the river and was encased in ice. It lay on its back with its face up and eyes wide open, one hand being across the breast and the other down by the side. One ankle was dislocated. On the left arm between the shoulder and elbow was a black and blue spot about three inches wide. About four inches above the ear on the left side of the head was a horizontal wound two inches long, a half inch wide and extending to the bone. Between this one and the ear was another similar and smaller wound, and back of this was seen an ordinary bruise. The skull bone was not fractured. There were no frozen clods near the body. Queries: Was the man murdered or did he come to his death by falling over the bank? If not, would the eyes have remained open? Will the eyes of one who freezes to death remain open?

Allow me to add that Dr. Sward of Oakland acquitted himself admirably in the first case as a medical expert witness.

Very respectfully,

WM. W. KEYSOR,
District Judge, Fourth Judicial District.
THE ACTIVE PRINCIPLE OF THE SUPRARENAL BODY—ITS ACTION AND USES.

Read before the Omaha Medical Society, February 28, 1899.

GEORGE H. BICKNELL, M. D., Class of '95.

The study of the so-called ductless glands has always been shrouded in almost complete darkness. Many ingenious theories have from time to time been constructed regarding their functions and relations to the remainder of the animal economy, but all have been mainly hypothetical and unable to stand the test of time. Since the time of Haller these organs have been believed by many physiologists to have something to do with the elaboration of the blood and possibly of the lymph; others have thought their chief function to be that of destroying or removing from the blood certain deleterious substances, the effete products of retrograde metabolism. It gradually dawned upon the minds of the profession that the ductless glands might produce a substance, physiologically useful, which was taken up directly by the blood and lymph. Sometime in the eighties Brown-Sequard coined for us the term, "Internal Secretion," and the discovery within recent years of certain active principles in the thyroid and adrenal has given this line of investigation renewed interest. It is hoped that these active principles may be known quantities, by the aid of which we may find other unknown ones, and thus pursue a few of the intricate problems of the glandular secretions to definite conclusions. An intimate knowledge of all of these problems would go far toward reducing physiological chemistry to a scientific basis; many obscurities in etiology and pathology would then be made clear, and much of the empiricism in the practice of internal medicine would be relegated to the past.

The object of this paper is not to discuss hazy and unsettled theories as to the function of the adrenals, but to give a brief sketch of the physiological action and therapeutical uses of an active principle which has been found in them, together with a short resume of some of the leading contributions upon the subject. In my desire to bring these notes within reasonable bounds and to avoid becoming tiresome much has been omitted which is of historical and
technical interest only. I have been unable to ascertain who was first to use the active principle of the suprarenal capsule as a therapeutical agent, but to an American physician, Dr. W. H. Bates of New York, we are indebted for much of our knowledge of its practical uses. It was he who discovered its vaso-constrictor properties when brought into contact with mucous membranes, and he was first also to suggest its use in heart diseases, a suggestion which has been carried out by other men with good results. These facts I had from Dr. Bates in the course of a correspondence some time ago, and Radziejewski, in his exhaustive article, quotes Bates and gives him due credit for extensive investigations. In 1894, after a series of experiments with the ductless glands, Bates began the use of the aqueous extract of the suprarenal in diseases of and operations on the eye. In the New York Medical Journal of May 16, 1896 he published in detail his experience with the extract, and his results were quickly confirmed by other men in various parts of the world. In regard to the physiological action of the extract, it is a direct and by far the most powerful vaso constrictor known, and to this property can be traced all the phenomena which attend its local and subcutaneous use. Placed in contact with mucous membranes it contracts the arterioles in a most remarkable manner and to a far greater extent than cocaine or any other substance previously known in medicine. Used in the eye its effects are, particularly if the eye be inflamed, at times almost startling: in from a half minute to a minute and a half following the instillation of a drop of a one per cent solution of the extract, the tissues become whiter than normal, this condition lasting from thirty minutes to an hour and a half. If some of the solid substance of the gland be placed in a moistened strip of cotton and packed in the lower conjunctival fold, the tissues, the entire thickness of the lower lid, and at times an inch down upon the cheeks, become blanched as though frozen. Its use in the eye is followed by no inflammatory reaction, it has no effect upon the accommodation, does not injure the cornea as does cocaine, and a tolerance is not established by its continued use. Radziejewski cites the case of a leading actor of Berlin who came to him one afternoon in great haste; he had marked superficial inflammation of his conjunctiva in one eye and said that unless he could be cured at once he must

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*Berliner Klinische Wochenschrift, June 7, 1898.*
give up his part for that night. He was given a drop of the extract in his inflamed eye, which speedily became as white as the normal one, and he departed very much elated, being given a few drops to use himself at short intervals during the evening. He afterwards reported that he was able to keep his eye white and go on with his work until nature restored it to its normal condition. Nothing so adds to the reputation of practitioners of medicine as speedy and satisfactory results following the application of remedies, and in this case there is no known agent which could have produced, in the same time, a similar happy result.

It is a matter of common observation that in cases where a mucous surface is very vascular, or highly inflamed, it is at times difficult or impossible to obtain sufficient local anaesthesia to permit an operation. In just such cases the extract, in conjunction with cocaine, is of great utility. It contracts the arterioles, thereby locking the absorbed cocaine within the tissues and preventing its speedy removal by the circulation. The anaesthesia produced in this manner is more profound, of longer duration, and, as less cocaine is required, there is less danger of constitutional disturbance. There is much less hemorrhage during operations upon mucous surfaces where this substance is used, consequently less embarrassment from this cause. In some cases of intra-nasal cutting operations the anaesthesia produced by cocaine is especially transitory, the blood following the first cut carries away the cocaine and you must finish your operation embarrassed by the blood which covers your field, as well as by the howls of pain which you elicit from your patient. Dr. Joseph Mullen of Houston, Texas,* reports seven extensive intra-nasal operations, which, by the aid of the extract, in connection with cocaine, were done without pain and with little hemorrhage. I have been using this substance in intra-nasal operations for almost a year and can fully confirm all that Dr. Mullen claims for it. A young physician came to me about two years ago seeking relief from an obstruction in his left nostril. Upon examination I found him to have a very large, bony, and cartilaginous shelf attached to the left side of his nasal septum. He readily consented to have it removed, but we found it absolutely impossible to obtain sufficient anaesthesia with cocaine to permit an operation without causing him great pain. He came several

times, at intervals of a few months, but our attempts at local an-
aesthesia were attended by no more favorable results, until about
two months ago, when he again returned, determined to be rid of
his obstruction at whatever cost in pain. This time the suprarenal
extract was used with the cocaine, the anaesthesia was almost
perfect, and although the growth was extensive and required con-
siderable time for its removal, there was no pain to speak of and
little hemorrhage. In regard to the external use of the extract
elsewhere, it has been used to a limited extent in dentistry. Ap-
plied to the unbroken skin it is supposed to be inert, but Velich of
Vienna says that he produced with it anaemia of the skin of the
hand, that he whitened the inflamed skin of a burn and believed
that he prevented vesiculation. Its use has been suggested in
genito-urinary surgery, and cases are reported in which with the
aid of the extract internal urethrotomy has been without pain and
with little hemorrhage. While daily observations for about one
year has convinced me of the utility of the active principle of the
suprarenal, when used locally, upon mucous surfaces, I am not
personally acquainted with anyone who has had much experience
with it in general medicine. Naturally we think first of Addison's
disease as one which might be alleviated or cured by the internal
administration of this substance. Dr. Wm. Osler was one of the
first to suggest the use of the suprarenal in this disease. In 1897
Kinnicutt collected from the literature forty-eight cases of Addison's
disease treated by the administration of the suprarenal extract.
Six of these were reported as cured, twenty-two improved, eighteen
unimproved, and in two cases the treatment had seemed to aggra-
vate the symptoms.

Dr. Robert M. Stone* of Omaha, had under his care a woman
of 35, who, for many years, suffered from obscure conditions. The
most pronounced symptom was a constant one in the various
attacks which she had. This was profound debility out of all
proportion to the general condition. There were also circulatory,
respiratory and digestive disturbances; weakness of the pulse, no
valvular lesion present, faintness, nausea, dyspepsia, vomiting,
entire loss of appetite, headache, vertigo; the urine was found nega-
tive always; these conditions were of constant recurrence for years
without any pigmentation. They yielded very slowly to tonics,

*Reported in discussing this paper at Omaha Medical Society.
strychnia and arsenic being of the most service. In 1898 all these were present and also pigmentation of the face, the mucous membrane of the cheeks, in the axillae and on the body. This seemed to establish the diagnosis of Addison's disease, which had been under consideration for some time, but in doubt. She was put on the tablets of the suprarenals—Parke, Davis & Co. Improvement took place at once in every direction; digestion returned, the heart's action was of greater force, the awful sense of prostration vanished, the pigmentation gradually faded away, strength returned and recovery seemed to be complete in a few weeks. There has been no return of the trouble in the past nine months.

Although no evil effects have been known to follow the local use of this agent, alarming symptoms have supervened upon its subcutaneous injection; there is great pain in the head and chest, accompanied by extreme anxiety and fear of impending dissolution. Swale Vincent* gives a full account of the toxic action of the extract when injected subcutaneously into dogs, cats, guinea-pigs, and other animals. These interesting experiments can only be given passing mention, but it is sufficient to say that any of these animals can be killed by the injection of a sufficient amount of the extract. He made extracts from many other glands and tissues, none of which produced similar effects upon animals, and in conclusion says: "It is probable that the suprarenal is the only mammalian gland or tissue (with the possible exception of the thyroid) which produces toxic effects upon animals when a boiled and filtered extract is administered subcutaneously. It will thus be seen that this substance is a powerful toxic agent, and that due caution must be observed in its use upon human beings."

Blood pressure can be increased enormously by its intravenous injection, less markedly by subcutaneous use, and in so far as the blood pressure is concerned, it seems to be inert in the stomach. Radziejewski says in 15 seconds after the subcutaneous injection of one cubic centimeter of a one per cent solution of the extract, the blood pressure begins to rise, and in 10 seconds more it is at its greatest height, where it remains 3 minutes, falling gradually to normal in about 15 minutes. This rise in blood pressure is accompanied by slowing of the heart, the diastole being prolonged and the systole increased in power. Numerous experiments have

*Journal of Physiology.
proven that the blood pressure is elevated, not by the action of the active principle upon the vaso-motor centers in the medulla, but by direct contraction of the terminal arterioles and by its tonic action upon the heart muscles.

Oliver has poisoned frogs until the heart ceased beating, and then by putting a small drop of the extract upon the bare heart it was made to beat again with force and regularity. Gottleib has given chloral-hydrate to animals until the heart stopped; normal saline solution and digitalis had no effect whatever, but upon intravenous injection of the suprarenal extract the heart beats soon became strong and regular. These results have been confirmed by scientific workers in all parts of the world, and many who have had experience with this agent, believe it to be the most powerful heart stimulant and tonic known in modern medicine. Bates of New York was first to suggest its use in diseases of the heart, and in the New York Medical Journal of Oct. 8, 1898, he published notes upon five cases treated with the extract, by other men, at his suggestion. The lesions from which they suffered were various; one patient, a man aged 55, suffered severe pain from angina pectoris, for which he required morphine, the pulse was 68 and wiry, the portal circulation was impeded and he had dropsy in the feet; he was given 5 minims of a one per cent solution of the extract hypodermatically; after five minutes his pulse was regular and a little slower, the peripheral circulation was improved; the most marked effect was upon the angina, the anxious feeling, pain and oppression being relieved for five hours. Other injections were afterwards given him with similar results.

It has been used in the exothalmic goitre, the tachycardia has improved, and in some cases the goitre has almost entirely disappeared. Dr. Solomon Solis-Cohen* reported four cases of this disease in which he thought the marked improvement in the condition of the patients justified the claim that the suprarenal extract is curative in cases of this malady.

The experiments of Oliver and others upon animals poisoned with chloral and other substances led to the idea that the suprarenal extract might be useful in chloroform narcosis. Mankowski* gives in detail the results of numerous experiments made upon dogs.

* Philadelphia Polyclinic, Sept. 17, '98.
He chloroformed them until respiration and circulation had ceased for 30 seconds, and then by injecting the suprarenal extract into their internal jugular veins was able to restore them to life. He succeeded best when normal saline solution, heart massage and artificial respiration followed the injection of the extract. Prof. A. C. Stokes of the Omaha Medical College, and myself, attempted experiments of a similar nature upon three dogs, with the following results: dog No. 1 died prematurely before we could expose his jugular vein. The extract was injected deeply into the tissues of his neck, and artificial respiration at once begun, and, although he had not ceased breathing 30 seconds, we failed to resuscitate him. Dog No. 2 was chloroformed, his internal jugular exposed. The chloroform was then pushed until heart and circulation had ceased one minute. The extract was injected into his jugular and artificial respiration begun. He began breathing and in half an hour was able to trot down stairs. Dog No. 3 was chloroformed until heart and respiration had ceased 30 seconds. No extract was given him and the most earnest efforts failed to restore him to life. Of course this is not sufficient work upon which to base an opinion in regard to the merits of the extract in chloroform narcosis, but we hope in the near future to work more in detail in this line, and shall then report our results.

In regard to the true nature of the active principle of the adrenal much remains to be learned. Prof. Chittenden and others claim that there are two chemically distinct bodies, both of which are physiologically active, one of which increases blood pressure and is insoluble in 90 per cent. alcohol, the other being freely soluble in alcohol and causing paralysis of the heart and muscles.

Drs. A. J. Abel and A. C. Crawford* state that the blood pressure raising constituent is an active sulphate or alkaloid, a pyridine base with equalities similar to vegetable alkaloids.

By most writers the active principle is said to be very unstable; that it is injured or destroyed by heat; that in a watery solution it quickly decomposes and becomes inert, and that it is incompatible with preservatives. Having seen no contradiction of these statements, and doubting some of them on account of certain experience with the substance, I undertook a series of experiments to prove or disprove them, the results of which, briefly summarized, are as follows. Repeated and vigorous boilings of a solution of the active principle do not, in my experience, in the least impair its activity,

*John Hopkins Hospital Bulletin No. 78, July, 1897.
even when boiled for hours on several consecutive days. Solutions made up two months ago in a saturated boracic solution are as active as at first, although the fungus which commonly develops in solutions of alkaloids is present. This disproves the common assertion that new solutions must be made up for each occasion, and removes a great objection which many men have to its use. Solutions made up in plain distilled water soon underwent putrefaction changes owing to the animal matter present, but the active principle was apparently intact for two weeks. Prof. Stokes kindly volunteered to ascertain for me the behaviour of the principle when treated with sulphuric acid. Some of the crude substance was boiled in a 10 per cent solution of sulphuric acid for one hour. The acid was then removed by barium chloride and the liquid filtered and evaporated. A faint trace of the active principle was then found in the residue left after evaporating to as low a point as possible, but none was found in the distillate or crude substance which had been boiled. A few days after Prof. Stokes and myself had completed our experiments we found that Dr. W. F. Southard of San Francisco, had published* a report of work done by himself in similar lines with like results, with the exception that he claims that mineral acids do not injure the active principle. It will thus be seen that this remarkable substance, the so-called active principle of the adrenal, is of great stability and it will no doubt soon be isolated and dispensed in a compact and convenient form, thus facilitating its general introduction into medical practice. As an adjunct to cocaine in local anaesthesia, as a haemostatic in operation upon mucous membranes, and we believe, as a stimulant and tonic in diseases of the heart, this agent is a valuable addition to our therapeutical resources.

* Pacific Medical Journal Nov. '98.

The greatest of faults is to be conscious of none.—Carlyle.

A good student is known by three things: He can begin to study when he doesn't like it; he can study when he would rather quit; he can quit when he ought to.—Ex.
NOTES ON MITOSIS.

It was Virchow who made the aphorism: "Omnis cellula e cellula," and by these words first clearly stated the law of genetic cellular continuity, which has now become one of the primary data of Biology. A cell can not originate other than by the division of a pre-existing cell. A multi-cellular organism originates by the repeated division of the germ cell, and, as this germ cell contains the hereditary substance, it follows that every tissue cell of the body will contain a part of this substance.

Of cell division two forms are recognized: the direct and the indirect. In 1855 Remak observed cell division as proceeding from the center towards the periphery, the nucleous first dividing, then occurred the division of the nucleus by simple constriction, followed by the division of the cell body and membrane.

It was not until 1873 that the changes occurring in the nucleus were more accurately observed, and to this complicated transformation Schleicher gave the name "Karyokinesis." This form of cell division was soon proven not to be of universal occurrence, but that it occurred in two widely different types, to which Fleming proposed the names "Direct and Indirect Cell Division," and later "Amitosis" and "Mitosis." Modern research shows that the direct cell division of Remak is the exception, and that indirect division or mitosis is the typical mode of cell division in the higher and many of the lower forms of animal and plant life. Mitosis is subject to much variation as to its mode of occurrence.

All recent works on cytology and histology contain a description of the various stages in mitosis. But in the laboratory it is difficult to demonstrate these nuclear changes in ordinary tissues with the common stains. Our effort shall now be directed toward the source and method of preparation of material, which will clearly show mitosis.

The best material is of animal origin, the segmenting ova of white fish and the larva of Salamandrina giving most satisfactory results. The most convenient material is obtained from plants, e. g. the pollen of Easter lily, the growing root tips of Hyacinth and Allium. The object to be attained is extremely rapid growth. If
a small, solid onion, on which the root tips appear as minute, shining projections, be put in a beaker containing water and kept in a warm place, growth is very rapid. By placing the beaker on a paraffine bath I have caused the roots to grow 20 mm. in 16 hours.

After having obtained the material the technique for the preparation of the specimen, as carried out in the biological laboratory, is the following:

1. Kill the tips in chrom-osmic-acetic acid for 8 to 12 hours.
2. Wash in running water 1 hour.
3. If the tips are much blackened by the osmic acid, decolorize with H2 O2.
4. Transfer through 10, 30, 50, 70 and 90 per cent. to absolute alcohol, leaving in each about 2 hours. The object is to get gradual dehydration so as not to disturb the protoplasmic structure of the cell contents. If it is desirable to keep the material for a time, place in a mixture of glycerine, 1 part 70 per cent alcohol 3 parts.
5. Clarify in xylol or clove oil.
6. Imbed in paraffine.
7. Section and fix specimens to slide with albumen.
8. Remove the paraffine from sections with xylol.
9. Transfer to absolute alcohol and run down consecutively through 90, 70, 50, 30 and 10 per cent alcohol to water.
10. Immense in a .5 per cent. solution of ammonio-sulphate of iron 2 hours.
11. Wash in water.
12. Place sections in a .5 per cent solution of Haematoxylin over night.
13. Wash in water. (In all cases use distilled water.)
14. Transfer to the iron alum solution, and when proper differentiation, as observed with the microscope, is obtained, wash in water for ½ hour.
15. Run through 10, 30, 50, 70 and 90 per cent., to absolute alcohol.
16. Clarify with xylol and mount in Canada Balsam.

The results obtained by this method are most accurate—a single section will often show all stages—the chromosomes are stained intensely black, as is also the centrosome. The achromatic spin-
dle appears as a bright gray mass of threads, the protoplasm is of a
dark grayish color.

Chromosomes are remarkable from the fact that in them it is
believed we have the vehicle of inheritance. It has been observed
that the head-piece of the spermatozoon contains an amount of
chromatic substance equal in quantity to that contained in the
nucleus of a completely maturated ovum. When these two pro-
nuclei unite we have formed the first cleavage cell, the repeated
division of which results in the formation of the complete organism.

A few years ago the definition of a cell, as given by a leading
German zoologist was: "The cell is a mass of protoplasm, contain-
ing within its substance a specially formed body, the nucleus." It
is now believed we must add to this a third element, the centro-
some. As the centrosome directs the plane of cell division it is
called the "Dynamic center of the cell." The function of the
achromatic spindle is probably almost purely mechanical.

By the repeated mitotic division of the first cleavage cell we
have an organism formed in which the cells become differen-
tiated into two groups. (1), the somatic cells, i.e., those which
are differentiated into the various tissues of the body, and (2),
germ cells which are of minor significance to the life of the indi-
vidual, but, when detached, give rise to a new organism. Hence
we have another aphorism, "Omnis viva ex ova."

LITERATURE.

1. Zimmerman—Botanical Microtechnique.
2. Lee—Microtomist's Vade Mecum.
3. Hertevig—Mark——Embryology.
5. Claus—Sedgwick——Zoology.

Sir Edward Cecil Guinness, now Baron Iveagh, and head of
the great brewing firm in Dublin, has presented $1,250,000 to the
Jenner Institute of Preventive Medicine in Great Britain. The
purpose of this munificent gift is to promote researches in bacteri-
ology and other forms of biology as bearing on the causes, nature,
treatment and prevention of disease. Heretofore, there have not
been adequate facilities in the United Kingdom in carrying on in-
vestigations of this nature, as there should be, but now by this
princely gift the opportunities for research will compare favorably
with any similar establishment in the world.
AN ARTICLE by Dr. H. Gifford, "The Diphtheria Bacillus," will be of interest to our readers. Dr. Gifford's well known conservatism adds greatly to the value of the conclusions drawn. From these conclusions the young clinician may take "new heart," knowing that the possession of a microscope does not give his competitor across the street, any very great advantage; knowing also that an early clinical diagnosis may save a life, which may be sacrificed if proper treatment is deferred until a microscopical diagnosis has been made.

THE EDITOR wishes to urge that every Alumnus make an effort to get to Omaha commencement week. Formal invitations
will be sent you soon. You cannot afford to miss coming. Come in and prove your loyalty to your Alma Mater. Meet your old instructors and classmates. Get acquainted with the new fellows, they are anxious to shake hands with you. Two hundred of you are expected. Write the Alumni editor that you will be here.

**

The April number of The Pulse will not appear until after school has closed in order that a full account of commencement, receptions, etc., may be given.

Sir James Crichton Browne, M. D., a distinguished English physician, has been denounced by an English coroner for proclaiming publicly the facilities for secret homicidal poisoning which have been offered by the advancement of modern medical science. Before the Pharmaceutical Society of Great Britain the physician, in an address on "Poison and Poison Legislation," pointed out that, notwithstanding the remarkable progress in toxicology and the vast increase in the number and variety of deadly agents at the criminal's disposal, the poisoners of today, for the most part, used the same poisons as those by which murder was oftenest accomplished in old times. Arsenic, for example, though now rendered easy of detection by science, is still a favorite weapon of prisoners and when this is not administered some other poison is selected which can be detected almost as certainly, thus preparing a net for the ensnarement of the criminal, which could be avoided by the use of alkaloidal and other organic poisons in such a manner and in such combinations as to perplex the clinical observer, baffle the pathologist, and set at naught the skill of the analyst. The doctor then referred to the many secret methods of poisoning which are seldom resorted to, and it was for this that he was criticised by the coroner, who claimed that Sir James had "put into the murderer's hand many new and terrible instrumentalities of death."—Ex.

The two most awkward things in the world—a woman holding a gun and a bachelor holding a baby.—Ex.
Alumni Department.

Dr. Geo. H. Bicknell, '95.

Dr. Jessen, class of '97, is located at Eddyville, Neb.
Dr. R. H. Mullins, class of '98, was in Omaha recently.
Dr. Georgia Fix (nee Arbuckle) '83, is among our new subscribers.

Dr. Frank Davies, class of '88, is doing a flourishing practice at Calloway, Neb.

Dr. Talbot, class of '97, who accompanied the 1st Nebraska Regiment to Manila in the capacity of hospital steward, has been promoted and now ranks as lieutenant and assistant surgeon.

Dr. C. C. Chan, class of '97, writes an interesting letter from Shanghai, China. He says that in summer exanthematous diseases and beri-beri are prevalent in that locality, while in winter there is little sickness excepting pulmonary diseases. His address is: I. Ningpo Road, Corner Sczecheun Road, Shanghai, China.

All Alumni who can possibly do so are exhorted to leave their arduous duties for twenty-four hours and come to our Annual Alumni and Commencement banquet in April.

To members of the class of '95 who are wondering why the class letter does not reach them we would say that the letter was lost on its way from Dr. Haden to Dr. Fitzsimmons. It had been about four months in passing through the hands of six members and had it continued on its way with the same rapidity it would have completed the round of the class in about the year 1902.

The Fifteenth Annual Contest of the Nebraska Collegiate Oratorical Association will be held in the Y. M. C. A. Auditorium, Omaha, Friday evening, April 7. The competing institutions are the University of Nebraska, Doane College, Grand Island College and Bellevue College. The winner of this contest represents Nebraska in the Inter-State Oratorical Contest, to be held in Lincoln, May 5. The program, with the accompanying features, will be a real treat. Admission 50 cents.
Clinical Department.

A MORNING AT THE COUNTY HOSPITAL, MARCH 4.

J. F. KELLY, M.D., EDITOR.

It is not alone the chronicity of disease, and its too obtrusive familiarity with both patients and doctors, with which we have to do at our County Hospital, but also its treacherous and endless variety and its pernicious effects. Indeed we are sometimes forced to question whether the building itself has not become involved in the pathological process going on in its interior. The plaster on the walls secretes various products of a toxic nature which exude upon the inner free surface and distill into the warm infernal air, imparting to it an enchantment which bewitches the patient and prejudices him against all other kinds of air, while it fascinates the doctor and student as they hasten to examine and study its effects on the human creature before humanity becomes extinct. Whether it be in the soul-perverted "legions" of microbes that swarm around an ulcerating black angel's grotto in the flesh, or in the multiple personality of the insane, the old theory of demoniacal possessions is being reviewed, and at the Douglas County Hospital especially, are these foul uncanny creatures and creatureless entities wonderfully prolific! They suggest better ventilation and all the means known to history and science, time, place and religion, to drive them out. The Chinese method would be specific treatment here—i. e.—to arm the patients with kettle-drums, tin pans, brooms, etc., and get up a great stir, commotion—circulation. But this would spoil our clinic. Indeed, to fully detail everything
seen and heard, felt, smelt and tasted, on one Saturday morning alone, would fill a large volume. We are therefore limited to the following brief entries:

Case No. 1. Operation by Dr. Jonas. A man was brought in with a growth involving the rectus muscle and extending to the peritoneum. The doctor made a medium incision 4 or 5 inches long through the skin, faschia, aponeurosis and some spongy tissue, which he suspected to be desmoid, into an abscess. The peritoneum was considerably thickened. The doctor said he never had seen a simple abscess with so thick a wall. The suspected desmoid tissue was trimmed away and the wound closed with thorough drainage established, which, said Dr. Jonas, is the principle thing in Lister’s antiseptic methods.

No. 2. A man from South Omaha with severe local blood poisoning, originating from a cut in the little finger, came up to be treated on good principles.

No. 3. A very typical case of psoriasis. It covered the entire body and was severest over the limbs. No marks from scratching were evident—no itching. It resembled the squamous form of eczema. The scales were of a whitish grey color and came off easily. The papillae did not stick up as in psoriasis punctata. In connection with the psoriasis was a superficial ulceration of the foot and ankle completely encircling the latter—a rather unusual place. Dr. Jonas said—Rose-budding granulations indicated that they were not infected. The granulations were considerably raised above the margin of the skin and prevented epidermization, thus indicating the need of a cautery. Because of the extensive psoriasis no surface could be found from which to remove a skin graft, so the oiled silk dressing was continued, with sponge grafting reserved as final resort. In Vienna Hospital, Dr. Jones said, that soaking in the bath followed with the use of sulphur-tar ointment was the treatment. As to internal treatment arsenic in the form of Fowler’s solution, increased to full tolerance, was to be given. Crocker, of England, says the doctor used salicylate of soda in 15 grain doses.

No. 4. Granulating stump of foot following the amputation of frozen toes. The toes were amputated so close to the line of demarkation that infection succeeded, and the wound h
been kept open for five or six weeks. The poor old man has been having a time of it, though patient. But he will have a better foot than if amputated higher up, and he will soon be alright again.

No. 5. With No. 6 Dr. Milroy appeared on the scene bringing in a man with excessive dropsy from nephritis. The man is improving, but the distension of fluid in the lower limbs is so severe that they feel like wooden legs.

No. 6. A retired blacksmith 70 years old. He has been here two and a half years. It has been three years since he received his shock of apoplexy. His present trouble appears in his defective articulation of sound, which Dr. Milroy speaks of as a sort of locomotor ataxia of the vocal organs. Specimens of the patients handwriting have been taken from time to time by the doctor and show marked change and decline of coordinating powers. His gait also is unsteady and shuffling. He presents a history of threatened apoplexy 25 years ago. Dr. Milroy dwelt at some length on the pathology of this disease, which he characterized as a meningoencephalitis, involving all the membranes and interfering with the nutrition of the grey matter thus inducing atrophy.

No. 7. Another case of meningoencephalitis with quite different effect on the motor apparatus. The preceding case was marked by a feeble indisposition and impotence in all his movements. This case, a thin, shrunken, lady of about 50 years, is all alive in her motors, figiting, twisting and jerking about in every muscle—chronic movements. Her mind is very feeble, whereas the man showed a mind better balanced and comparatively stronger.

This County Hospital with its its insane wards is rich in such material and the neurological clinics conducted by Dr. Milroy are always full of interest. The class now listened to the report of an examining committee of three on case No. 9, which was ushered into the room.

No. 8. A butcher from So. Omaha, who has lost 75 pounds in the last two months, and presents a most cachetic, cancerous appearance. He gave no family history, had suffered usual childrens diseases and typhoid fever. He was well till New Year’s night, when diarrhoea and a cough set in. The coughing did not long continue but the diarrhoea is still with him. Physical exam-
The long inspection would reveal. There was acute pain on manipulation but no guiding history, and, apparently no other symptom. An obscure symptom was a difference in temperature between the distal phalanges and the second and third, the distal being cool to the touch, due to a constriction of the arterioles through the vaso-motor nerve supply. The term "vaso-motor neurosis" was applied 20 years ago, says the doctor before anything was definitely known about the vaso-motors. The lesion was peripheral and not central, because asymmetrical. For treatment cold water in forcible shower upon the part, alternating with brisk friction was advised.
CHEMICO-METRICAL MADRIGAL.

I knew a maiden, charming and true,
With beautiful eyes like the cobalt blue,
Of the borax bead, and I guess she'll do
If she hasn't another reaction.

Her form is no bundle of toilet shams,
Her beauty no boon of arsenical balms,
And she weighs just sixty-two kilograms
To a deci-decimal fraction.

Her hair is a crown, I can truthfully state
'Tis a metre long, nor curly, nor straight,
And is as yellow as plumbic chromate
In a slightly acid solution.

And when she speaks, from parlor or stump,
The words which gracefully gambol and jump
Sound sweet like the water in Sprengel's pump
In magnesic phosphate ablation.

One day I said, "I will leave you for years,"
To try her love by rousing her fears;
She shed a deciliter of tears,
Turning brown the tumeric yellow.

To dry her tears, I gave her, you know,
A hectogram of candy; also
To bathe her red eyes, some H₂O.
She said: "You're a naughty fellow."

I have bought me a lot, about a hectare,
And have built me a house ten metres square,
And soon, I think, I shall take her there,
My tart little acid radicle.

Perhaps little sailors on life's deep sea
Will be the salts of this chemistry,
And the lisp of the infantile A, B, C,
May be the refrain of this Madrigal.

H. W. WILLEY, M. D.,
U. S. Dept. of Agriculture.
Class Talks.

SENIOR NOTES.

H. E. Burdick, '99, Editor.

What is a "jerky pulse?"

Finney has been indisposed for several days past.

James has been complaining of that "general bad feeling."

Peterson visited friends at Lincoln last Saturday and Sunday.

Spencer has a new location for the Pons Variola. Ask him where.

Kelly administers chloral-hydrate by inhalation in order to induce a hypnotic state.

St. Patrick's day brings to our memory the famous battle fought one year ago, in which several braves gallantly lost their neckties.

Banguess and Mercer are wearing a smile of contentment indicating that "A load has been lifted from their minds" since Friday afternoon.

Dr. Mullen dropped in on us one day last week and told of the boom that is now on in the west. Dr. Mullen is always popular with the class of '99.

Peterson uses a pessary to hold a misplaced ovary in position.

Beatty recently entertained the senior class by a description of the deformity known as the "hair lip."

At a recent class meeting Kelly was selected as representative spokesman for the senior class at the alumni banquet and Finney for the banquet to be given by the undergraduates.

Mercer and Finney have been assisting Dr. Milroy with the medical clinic the past week. It is not necessary for them to make a physical examination in order to make a correct diagnosis.

As an impersonator Beatty is without a peer as he recently demonstrated at one of the clinics. If I were to speak further, I
would say, that he redeemed himself with the accurate diagnosis
which he made immediately afterward.

Four weeks more will bring us to examinations. Seniors are
already looking for desirable locations, and we are patiently await-
ing the day when we may hold our sheep skins securely in our
hands for perhaps, we realize now more than ever before that "A
bird in the hand is worth two in a bush."

Strader attempted to demonstrate his skill as an electric
motor-man, as the class was returning from the County Hospital,
Saturday, and succeeded in causing a few hip-joint dislocations in
the occupants of the car, and a case of nervous prostration in a
"cabby" who was following close in its wake, besides bringing
upon his own shoulders the wrath of the regular motor man.—He
hasn't done anything since.

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JUNIOR NOTES.

All's well in Dugan's alley.—Rholf.

Davis has threatened to enter the pugilistic arena.

Nielsen made a diagnosis at the County of Pediculosis Corporis.

What are you going to do this summer? Consult Bartlett and
Preston on their liquid air project.

Just a year ago THE PULSE began its career. It has been well
cared for during its infancy and has become a necessity to every
student and alumnus. Our congratulations to THE PULSE on
this anniversary.

Douglas is looking after the financial end of the undergradu-
ate banquet to the seniors, and it is necessary that your assessment
be paid in to him promptly.

The class in bandaging is having a review and each member
of the class is given ample opportunity to show his ability in this
line, in return for which he submits to being bound and gagged in
the most approved manner.
Short stories.—A collaboration of the Juniors on "What he thought when the diagnosis was called for." The leaders are: "What happened to Jones," "Why Smith left home," "The slaughter of the innocents," "The Ides of March."

A consignment of Havana cigars has been received by Douglas from Gritzka for his former class. To say the least we appreciate this very much and when the next box comes we hope he will be with it.

At the invitation of the Junior class of Bellevue a delegation of Junior Medics and Dents spent Friday night at Bellevue. We were royally entertained during our brief visit and the event was made a leader in our class history. Bellevue hospitality has certainly done much to relieve the monotony of the long grind. The early evening was spent in the parlors of Finley Hall singing college songs 'till there were no more to sing. Later the Junior classes were the guests of Dr. and Mrs. Kerr, at their residence, where class enterprises were discussed and refreshment served. Mr. Rolfe expressed briefly our gratitude to Dr. and Mrs. Kerr, and to the Juniors of Bellevue, for the manner in which we were entertained. We then found our way back to Finley Hall to spend the rest of the night. The irrepressible Freshman was also there and as soon as the lights were out he was at his usual pranks of making the night hideous with his yelps, to do, after his manner, a share toward making the occasion memorable. The eight o’clock train brought us back to Omaha.

RESOLUTIONS.

The junior classes of the University of Omaha hereby tender to the ladies of the First Presbyterian Church of Omaha their deepest and warmest thanks for the hearty and generous hospitality, which made the first annual reception by the junior classes to the faculties and students possible and rendered the occasion a pronounced success—one long to be remembered in the annals of U. of O. history!

F. A. BREWSTER, O. M. C.
J. H. BRNEDICT, O. D. C.
WILLIS H. KERR, B. C.
SOPHOMORE SIFTINGS.

E. H. Simth, '01, Editor.

Emerson, Allen and French visited their respective homes last month.

Wells and Tower have been doing some quizzing in the dissection room of late.

Dr. Florence Neal, who graduated last year, visited the anatomy class recently.

The class was well represented at the reception given at the First Presbyterian Church, Washington's Birthday.

Allen has been sick, but is able to be out again.

The class in chemistry has done some work in the analysis of stomach contents in the laboratory and is being introduced to the mysteries of the Diaz reaction which is supposed to reveal the presence of typhoid.

Shook was called to Auburn, Neb., as a witness in a case tried at that place. He was court reporter in a former trial of the same case.

Dodge received word from Gritzsky, a sophomore last year, saying that he would be back next year. He is a hospital steward with the 3rd Nebraska, and was located at Havana, Cuba.

Dr. Curtis demonstrated a brain before a number of the students in the small lecture room one evening lately.

There has been two whiskerectomies performed upon members of the class this term.

We understand that Emerson has gone home on account of the sickness of his father.

FRESHMEN LOCALS.

J. A. Peters, Editor, '02.

The inhabitants of Dugan’s Alley gave an oyster supper to themselves and a few invited guests last Saturday evening. Oysters were served in three styles, after which the following delightful program was rendered: Address of Welcome, Fitzsimmons;

Mantor, Yoder and Rathburn, assisted by a few of the local physicians, performed a very interesting post-mortem last week.

The following members of the class have finished their second part in dissecting: Carlile, Keyes, Morseman, Hoopes, Wills, Fitzsimmons, Rundstrum and Peters. Others will begin at once.

The final work in chemical laboratory for this year is the working out of ten unknowns. A few of the class have already completed this work.

Mr. Chapman was detained at his home in Hastings, Neb., about a week the latter part of February on account of illness.

The Dental Freshmen have finished the required work for this year and will soon break the ties which bind and depart for their respective homes. The feeling which has existed between this class and the Freshmen Medics has been one of friendship, and we shall certainly miss them when they are gone. We bid them farewell, hoping to meet them all again next fall.

Mr. E. J. Fleetwood attended the marriage of his friend, Mr. O. Peterson to Miss Ella Ekedahl, last Friday evening, and acted as best man. Here's to the day when Fleetwood will occupy a more prominent position on a similar occasion.

Mr. J. James, of Elk horns, Ia., spent Saturday and Sunday with his brother P. E. James.

Mr. J. C. Jordan, of Gordon, Neb., spent several days last week visiting with M. B. McDowell.

On March 30th Dr. Curtis gave a unique review of the knotty problems in the Anatomy, considered up-to-date; by permitting each student to suggest, in the form of a written question, the discussion of any part not well understood. It is certainly not worthy that at least ninety per cent of the questions pertained to the head and neck. Such a review lesson is very instructive and highly appreciated by the students.
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