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THE NEW YORK PHARMACAL ASSOCIATION

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Calendar 1890

JANUARY.

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ETTERLINUS, PHILA.

Is Medicine a Science?

In a recent discussion of this question, Dr. George M. Gould ably defends the claims that medicine may now justly advance as to its place among the sciences, and recounts some of its achievements and prospects.

In surgery, ophthalmology, obstetrics, dentistry, otology, dermatology, etc., there is on the part of competent physicians no considerable difference as to diagnosis and treatment in a given case; and the reduction of the mortality from diseases belonging to these departments is proof of that systemization and accuracy which we call scientific. It is well known that the application of bacteriological study to surgery, obstetrics, etc., has in important respects revolutionized them. Surgical, hospital, and puerperal fever are now almost things of the past. Twenty years ago it was not uncommon for the mortality of puerperal septicæmia to mount as high as 30, and even 50 per cent. It is to-day less than 1 per cent. The same explanation is to be given as regards the successfulness of the modern Cæsarean section. The science of pelvimetry has also saved the lives of many children and mothers. Ophthalmology is perhaps the most exact of the medical sciences, and even if no prophylaxis of cataract ever be found, the restoration of vision in 95 per cent. of cataract operations is a decisive proof of excellent work. But, perhaps, a still greater beneficence is to come from stifling the most fertile sources of reflex neurosis—the headaches, dyspepsias, choreas, etc., so often due to to "eye strain."

If one thoroughly conversant with the medical progress of the past few years take up even the best work of pathology or general medicine issued five or ten years ago he is astonished to find how much seems old and outgrown. The stupendous discoveries and advances made from day to day cause the book before the last to seem like history rather than present day conclusions. No other discovery has aroused so great hopes, and none has so superbly satisfied many of them, as that of the existence and disease-producing influence of the minute organisms called bacteria microbes, or micro-organisms. Their pathogenic influence is now established beyond controversy, and to this discovery is due the revolutionizing of surgery, the extinction of surgical and puerperal fever, etc.

Indeed, every department of medicine has been electrified by the partial success and perfect promises that it holds out. The infective diseases are the principal disease and death-producers of the world, and all are quite certainly bound up with the transfer of specific bacteria or poisons from one organism to another. The profound, almost sole, lesson of prophalaxis and preventative medicine, is the avoidance of contagion.

Phthisis, the most fatal of all diseases, causing one death out of every eight, is now proved to be contagious. Its inception depends upon the passage of the living bacillus from one organism to another. When this is prevented, the dread affection will no longer mow down its millions. Its prevention seems easy, and by two feasible simple means: the devitalization of the sputum of consumptive patients, since the desicated tubercle bacillus still maintains its vitality; and the legal control and inspection of all dairies and the slaughtering of animals, so that tuberculous meat or milk shall not be sold.

Up to the present time it must be confessed that bacteriological studies have not brought out therapeutical measures to equal the etiological importance ascribed to the micro-organism. To the patient attacked with infectious disease the thing of all importance is not prevention, but cure. The enemy is intrenched. The great

aim now is to find some agent that will reach and kill the bacterium without killing the organ or tissue in which it is secreted. Many indications, and indeed many successes, foreshow that we are upon the eve of brilliant victories in this respect, and the active ingenuity of a thousand delvers is at work upon the problem. What honor too great for the discoverer of such an agent? A most promising outlook is also found in the discovery that immunity is gained in some diseases, and perhaps in many, by the inoculation of purely chemical, or artificial synthetic, substances. The thought, like so many, is brilliant with possibilities that make us wish to see what the next few years may bring forth.

A beautiful illustration of the possible method of action and reaction between the bacterium and leucomaine is the theory of malarial and intermittent fevers—a theory, indeed, that rests upon a pretty firm basis of probability and justifiable inference. It is well known that bacterian culture media often develop some substance that stops their growth and that they die, as it were, in their own poison. It is supposed that the malarial micro-organism does the same in the blood, and that the remission or intermission stage of the disease corresponds to the period when the circulating bacteria have been drowned or paralyzed by their self-producing poison. The stage of the return of the fever is synchronous with the revivification of the microbes, or with a fresh invasion of new armies from the spleen and lymphatics. Thus, again and again, are we brought back to the conclusion that in aim and in fact medicine is becoming preventive. Every discovery, even in therapeutics, seems to bear in its hand the motto, Prophylaxis is the best cure. It is not that great and invaluable discoveries of healing agencies are not constantly being made. The nobler aim and the manifest destiny of a far-sighted prevention become necessarily dominant ideals.

THE TREATMENT OF INSOMNIA.

In his concluding remarks in his paper on this subject (read in the Society of Internal Medicine), Iastrowitz, of Belin, considers the following remedial applications:—

Alcohol may be employed in the form of beer, wine, cognac, etc., and it may be used, especially, in cases where the other soporific remedies would occasion considerable weakness of the heart. In patients subject to chronic insomnia, alcohol should only be used in the light forms of psychical excitement; thus a few glasses of beer may be given at bedtime. Alcohol should be avoided in lypemania and hypochondria, because it increases the morning depression common in these cases.

Opium and morphine. I regard the alkaloids as the true soporifics, contrary to the general sentiments, which regards them as simply calming remedies. In spite of the useful action which antipyrin, phenacetin, etc., exert in pain, we cannot ignore the claims of morphine, which has also a tonic action. Thus sportsmen employ it to stimulate themselves, and inject it into their horses to increase their resistance to fatigue. The tonic action of morphine explains its use in the different states of morbid terror, and in the insomnia of anæmic subjects. It must be cautiously administered in bronchitis, pneumonia, and heart disease. In chronic insomnia it is contra-indicated, for the morphine habit is much more difficult to combat than that of chloral, paraldehyde, and sulphonal. In certain forms of insomnia—in the senile form, in those which depend upon an intestinal affection, and in chronic lypemania —opium acts better than morphine. Narceine in doses of 0.1 to 0.15 centigrams is a good soporific. Codeine in the same doses sometimes produces convulsions.

Chloral is unquestionably the most powerful soporific, but in large doses it lowers blood pressure considerably and paralyzes the heart. Chloral is our best remedy in delirium tremens and epilepsy. According to Liebreich, it is contra-indicated in diseases of the heart, and hysteria. In my opinion it is contra-indicated in cases where there is considerable adhesion of the lungs, as well as in those cases where, after a dose of four grains, we do not find that excitement which is manifested

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in part by contraction of the pupils. In cases where it is active in small doses, chloral may be employed to as good advantage in chronic insomnia as in the acute form. It is well to add a little morphine to the dose, for by retarding the elimination of the chloral it renders the action of the latter more permanent.

Paraldehyde does not weaken the heart, but when employed for a long time it manifests its close relation to alcohol by a chronic intoxication analagous to the grave forms of delirium tremens. Because of its disagreeable taste and elimination by the lungs, paraldehyde is contra-indicated in bronchitis and dyspepsia. It is indicated in hysteria (because its taste *is* disagreeable), and in icterus accompanied with pruritus. It has also been recommended in cardiac stenosis, and rejected in dilatation of the right heart and arterio-sclerosis. Paraldehyde acts very well in insomnia from emotional causes, and in epileptic excitement, but its action is less favorable in the four conditions of psychical excitation and morbid fear.

Hydrate of amyl is a good soporific, free from all danger. It sometimes exerts a bad influence on the stomach, however, and it is then necessary to give it by injection. It has been recommended in typhoid fever, in heart disease, as a remedy for cough (when paraldehyde is contra-indicated), and as a soothing remedy in cholelithiasis.

Sulphonal enjoys the great advantage of being tasteless and inodorous, which allows its administration without the knowledge of recalcitrant patients. It exerts no influence upon the heart. In acute diseases its action is not sufficiently rapid, and it has no influence upon pain. It is, however, an excellent remedy in the insomnia of motor origin, as for example, in chorea and all forms of mania. I administer it often in small sedative doses during the day, and at evening give a large soporific dose. The prolonged use of sulphonal produces a peculiar condition of weakness in the limbs, but unaccompanied by real ataxia. For this reason it is necessary to discontinue its use from time to time.

As regards the inconvenience, danger, and intensity of their soporific action, the remedies of which I have spoken may be classified according to the following series: As regards their inconvenience and danger: morphine, chloral, hydrate of amyl, paraldehyde, sulphonal. As regards their efficacy: chloral, sulphonal, hydrate of amyl, paraldehyde, morphine.

ANÆSTHESIA.

Dr. Geo. T. Shrady, after a study of the subject of anæsthesia, has arrived at the following conclusions:—

1. In commencing the administration of ether the gradual method is to be preferred.
2. Its employment allows the lungs to empty themselves of residual air, prevents coughing and struggling, and places the organs in the best possible condition to receive and rapidly utilize the ether vapor.
3. After the stage of primary anæsthesia is reached, the more pure ether vapor the patient breathes the better.
4. The shorter the time of anæsthesia, and the smaller the amount of ether used, the less likely are the unpleasant sequalæ to occur.
5. The more evenly it is administered the less shock to the patient.
6. Anæsthesia should be entrusted to experienced administrators only.
7. Many of the fashionable efforts to resusitate patients are not only useless but harmful.
8. The minimum amount of force should be employed to restrain the muscular movements of the patient.
9. Mixed narcosis is often advisable for prolonged operations.
10. The utility of the galvanic battery, in threatened death, is yet to be proven.
11. The most trustworthy means of resusitating desperate cases are artificial respiration, hypodermic stimulation, inhalation of nitrate of amyl, and inversion of the body.

HOW SHOULD THE MIND OF THE PATIENT BE UTILIZED IN THE CURE OF DISEASES?

DR. A. S. SHAW says we need to remember that:—

1. A thorough appreciation of the fact that the mental state frequently induces disordered function of the body.

2. That such functional derangements may, and frequently do, result in structural changes.

3. That disease may be mimicked unconsciously because of, (a) automatic imitation; (b) regnant idea; (c) expectant attention; (d) inherited or acquired psychic state, neurasthenic as well as hysteric.

4. That the psychic condition requires special treatment as much as does the the resultant functional or structural derangement.

5. That we should refrain from sharing our pessimistic views as to the result of treatment with our patients, of this class, particularly.

6. That we should cease dividing our knowledge of disease and its cure with the laity.

7. That when interrogated by our patients as to what drugs we are using and what dose we are administering, and the *modus operandi* of action of the same, we should courteously, yet positively, indicate that we are posing as practitioners, and not as teachers of the healing art. That our services as physicians are at their disposal, but that we have neither the time nor the inclination to make half-way doctors of them.

8. To conceive and to do the proper thing for our patients, regardless of what they may consider appropriate, is the essence of skill. A placebo is often better medicine than physics for cases that are relieved by faith-cure at all.

9. Be less servile in our demeanor.

COMPARATIVE VALUE OF ANTIPYRIN, ANTIFEBRIN, AND PHENACETIN.

WHILE the regular and systematic use of antipyretic drugs in continued fevers is no longer to be considered a safe or wise practice, yet their employment in ephemeral fevers, in acute febrile attacks, heat-stroke, and very high temperatures in all conditions, is often stringently indicated. A study of the comparative value of antipyrin, antifebrin, and phenacetin, recently made by Surgeon-Major A. Crombie, of Calcutta (*The Practitioner*), gives us some facts of practical interest.

Dr. Crombie's observations are very clearly summarized as follows:—

1. As regards efficacy, antipyrin comes first, and there is little to choose between antifebrin and phenacetin.

2. That as regards safety the advantage lies with phenacetin. A subnormal temperature never resulted from the use of that drug. Dr. Crombie had seen subnormal temperatures as the result of the use of antifebrin, but never collapse, which he had once seen from the use of antipyrin.

3. As regards rapidity of action, antipyrin, probably on account of its solubility, comes first, antifebrin second, phenacetin third. The fall after the use of phenacetin is more gradual, and the minimum is not reached for three, four, or even five hours after the administration of the drug.

4. As regards duration of effect the advantage lies with phenacetin.

5. As regards certainty of action, Dr. Crombie quotes them in the same order as that of rapidity—antipyrin, antifebrin, phenacetin. Phenacetin should be prescribed either in powder or in lozenges which are soft and friable.

6. As regards inconveniences, in the climate of India phenacetin is followed by just as profuse sweating as either antifebrin or antipyrin, and this, to his mind, is the great drawback in the use of antipyretics, patients having to change their clothing

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once or twice in a night after the use of any of these drugs. Whether or not an antipyretic will yet be found which will be capable of safely reducing abnormal temperature without causing profuse perspiration remains to be seen, but as yet we do not possess one.

Dr. Crombie adds that there is one peculiarity which phenacetin does not share with the other antipyretics. He alludes to a soothing and soporific effect which it undoubtedly possesses, so much so that in cases of slight feverishness accompanied by insomnia and great restlessness small doses of three or four grains of phenacetin, not sufficient, in India at least, to produce perceptible diaphoresis, insure a quiet, peaceful, and sleepful night, with no headache in the morning.

In conclusion, he says that, in heat apoplexy, sunstroke, and hyperpyrexia generally, antipyrin is indicated. In temperatures of 103° to 105° antifebrin or phenacetin, in temperatures below 103° the preference should be given to phenacetin.

THE GASTRIC JUICE IN FEBRILE DISEASES.

Dr. Anton Gluzinski, of Cracow, after some extended experiments on this subject, draws the following conclusions:—

In regard to the acute infectious diseases:

1. During the whole course of the fever (except in the final stage of typhoid fever) the gastric juice contains no hydrochloric acid.

2. The gastric juice digests neither in the organism—since it contains no peptone—nor outside the organism.

3. This gastric juice digests very well, artificially, after the addition of the proper quantity of hydrochloric acid, which shows that it contains pepsin, and that the impossibility of digestion is due to the absence of hydrochloric acid.

4. With the disappearance of the fever, or somewhat later, the gastric juice becomes capable of digestion both within and outside the organism.

In regard to the chronic febrile diseases, normal, digesting gastric juice exists during the fever.

Other things being equal, the nature of the gastric juice in febrile diseases is influenced more by the nature of the injection than by the high temperature. The possibility of a secretion of active gastric juice increases the hope of good results from forced feeding.—*Deutsches Archiv f. Klin. Med.*, Bd. 42, Hft. 5.

THE EFFECTS OF ACIDS ON THE FUNCTIONS OF THE STOMACH.

1. Acids throw down a considerable precipitate of mucus. 2. They increase the cellular elements of the gastric contents. 3. Their introduction is followed by butyric-acid reaction, most marked after hydrochloric acid. 4. Larger quantities of the acids result in a considerable effusion of bile into the stomach. 5. They stimulate the secretion of pepsin, but have no influence upon the secretion of hydrochloric acid. 6. Their long-continued administration is followed by marked diminution of the secretion of hydrochloric acid. 7. Even in large quantities hydrochloric acid produces no gastric disturbances. On the contrary, a continued administration of the acid is attended with a feeling of well-being. 8. The difference in the effect between acids and the alkaline salts on the gastric functions consists in the fact that the alkaline salts dissolve the mucus and decrease the secretion of pepsin, while the acids precipitate the mucus and increase the secretion of pepsin. The disappearance of the alkaline salts from the stomach is followed by a decided increase of the hydrochloric acid secretion. This does not occur, or only to a slight degree, in the case of acids. Both the acids and salts, in large quantities in continued use, have the same effect in lowering the activity, and finally in destroying the function of the glands secreting hydrochloric acid.—*N. Y. Med. Record.*

ACIDITY OF THE GASTRIC JUICE.

CHARLES RICHET has made a series of experiments by which he finds that the acidity of the gastric juice in man, varies between 1.50 and 2 grammes, and is most marked toward the end of digestion, when it may attain the highest figure. During fasting, the gastric secretion is hardly at all acid, and in some instances may even be alkaline. The gastric juice, then, must be considered as intermitting; in any event, hunger cannot be attributed to acidity.

In some animals, such as the carnivorous fishes which swallow their prey whole, the acidity is extreme, amounting perhaps to as much as half an ounce per litre.

In gastric juice, the hydrochloric acid is combined with various organic substances (leucin, pepsin, pepton, glycocol), which belong to the group of *acid amids*, and, by molecular constitution, have the property of indiscriminately playing the part of acid or base; hence the possible formation of chlorhydrates of pepsin, leucin, etc., and by reason of these combinations, it is impossible to detect hydrochloric acid by ordinary reactions.

How is the acid of the gastric juice secreted?

During fasting, there is mucous, but no true gastric fluid, *i. e.*, a juice which is both *acid* and *peptic* in the stomach; but the moment when digestion begins, however, by irritant action of alimentary substances, a determination of blood in the walls of the stomach is excited, the mucous membrane reddens, and drops of juice ooze to the surface of the mucosa. The secretion, too, is largely dependent on reflex nervous influence. The acid is found at the surface of the membrane (as proved by CLAUDE BERNARD), while the subjacent cells have for their rôle the secretion of pepsin.

Although the active principle of the gastric digestive fluid is hydrochloric acid, lactic acid is also formed toward the end of digestion. When the latter is formed in excess, the best corrective is dilute hydrochloric acid, which prevents secondary fermentations, and thus removes the source of the lactic acid; hence the benefits of hydrochloric lemonade in acid dyspepsias.

With regard to the mechanism of formation of the acid gastric juice, it has been compared to the double electrolytic decomposition of chloride and phosphate of soda. The alkali which is formed circulates in the blood, and acid is secreted. In this case, the blood should have a greater alkalinity during digestion; and in fact, if the acidity of the urine is tested at this period, it will be noted that the normal acidity has diminished; perhaps even the reaction is alkaline. This certainly favors the hypothesis, though it must be confessed, however, the data are still very incomplete.

THE INFLUENCE OF ALCOHOL ON PEPSIN.

IN a recent memoir Dr. Henri de Nesslern reviews the current views respecting the influence of alcoholic preparations on pepsin, and especially the authoritative statements of Vulpain, based on the researches of his pupil Mourrut. It will be remembered that Vulpain condemned all the vinous or spirituous combinations of pepsin as inert and valueless, while Portes took a different view, affirming that it is only concentrated alcoholic solutions that have a damaging action on pepsin.

The questions considered by Nesslern are the following:—

1. Is pepsin soluble in alcohol and the aqueous solutions of alcohol?

2. Does alcohol, even when considerably diluted, materially alter the properties of pepsin?

The results obtained are summed up in the following conclusions:—

1. The differences of opinion on the reciprocal action of alcohol and pepsin are due to the fact that the products employed were defective.

2. A pepsin that will stand the test should not only dissolve, but peptonize albumen and fibrine.

3. Good pepsin still preserves its digestive power in twenty per cent. alcoholic solutions.

4. Pepsin is completely altered in its properties by seventy per cent. alcoholic solutions.

5. As far as the wines and elixirs of pepsin are concerned, it is not by their alcohol that they render pepsin inactive, but probably by the tannin which they contain; and in the fabrication of such preparations, wines which contain little tannin should be chosen. For the *wine of pepsin* of the French Codex, Lunel wine is selected as being most free from tannin.

According to Barbet, sugar does not impair the action of pepsin, and most of the salts are compatible with it. The presence of chloride of sodium diminishes its action, while this is enhanced by the salivary and pancreatic diastases, by liquors in process of alcoholic, acetic, and lactic fermentation, old cheese, etc. Lactic acid was pronounced *enpeptic* by Magendie, Claude Bernard, and Schiff, and recommended especially as a medicine by Handfield Jones. Hydrochloric acid, associated with pepsin, was a favorite remedial agent with Trousseau.

Among the substances antagonistic to pepsin should be mentioned the alkalies and alkaline bases, when in any considerable excess, as well as all metallic salts capable of precipitating it from its aqueous solution.—*Boston Med. and Surg. Jour.*

HYDROCHLORIC ACID IN INDIGESTION.

Some very recent investigations of Boas, whose contributions, in connection with Ewald, to the physiology of digestion, and to the clinical study of its derangements, are familiar to the profession, afford valuable hints which may be utilized in the latter.

Boas confirms the finding of Munck, Fr. Mueller, Kesch, and others, that the intestinal fluids, contrary to formerly accepted ideas, possess no emulsifying property, and that such a function is rendered improbable by the almost constant reaction during intestinal digestion. There is, it is true, a considerable spitting up of neutral fats under the influence of the intestinal fluids. In normal digestion there is a preparatory duodenal digestion, a continuation of stomach digestion, which ceases only when acid chyme masses cease to flow; then the essential intestinal ferments and the bile begin to act. In those pathological cases in which an excess of acid is secreted, the stomach digestion is prolonged into the intestinal canal; the digestion of carbohydrates and fats, must, therefore, suffer materially, while the albumens are easily disposed of. On the other hand, insufficient secretion of acid, and consequently too early and persistent alkalinization, may give rise to bile decomposition and to the formation of aromatic substances (skatol, indol), with a tendency to flatulence, meteorism, diarrhœa, and their consequences. In cases of defective acid secretion, the therapeutic importance of hydrochloric acid does not rest so much upon its digestive action, which in the small doses usually administered must be rather doubtful, but to its anti-zymotic influence. Hydrochloric acid acts as a disinfectant upon the gastro-intestinal canal. If a decided digestive influence is desired in these cases, pancreatic preparations, which in the absence of acid may act without hindrance, are indicated. These views of the true action of hydrochloric acid explain its value in checking the troublesome eructations and flatulence in nervous dyspepsia, in which irrigation of the stomach, several hours after a meal, demonstrate a perfect stomach digestion. The successful application of hydrochloric acid in these distressing cases would be inexplicable upon any other theory than that advanced by Boas, that it acts as a disinfectant of the gastro-intestinal canal.

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THE CLASSIFICATION OF THE DYSPEPSIAS.

As the knowledge of digestive ferments has been increased and their quality improved a better understanding of their application is being developed by physiologists and clinicians.

In order to use digestive ferments intelligently and effectively a correct diagnosis of the departures from the normal condition of the digestive processes is required. A step in this direction is the classification of dyspepsias by Dr. Julius Glax who has presented systematically the knowledge so far accumulated regarding many of these different forms.

The term "dyspepsia" is rapidly being relegated to the realm of old fashioned and mystical pathology. It can no longer be used by exact clinicians, except when carefully qualified. To be sure, there are many cases yet in which the particular form of functional stomach disorder from which a patient suffers can not always be diagnosticated. But such cases are diminishing in number, and the physician who makes a diagnosis of dyspepsia without further inquiry must be put down as a loose and careless observer.

There is little excuse in failing to recognize decided gastric catarrh or well-marked dilitation. The determination of the functional disturbances is constantly being made easier.

Under neuroses of the stomach may be included nearly every gastric disorder of a functional kind.

The classification is as follows:—

Group 1. Motor neuroses. (*a*) Hyperkinesis, or irritative forms: (1) Peristaltic and anti-peristaltic mobility of the stomach; (1) morbid eructations, belching, etc.; (3) nervous vomiting; (4) cramp of the stomach—general—of cardia, and of pylorus. (*b*) Hypokinesis, or depressive forms: (1) Atony of the stomach; (2) insufficiency of cardia, regurgitation, merycism; (3) insufficiency of the pylorus.

Group 2. Sensory neuroses: (1) Cardialgia, central, reflex; (2) changes in the physiological sensations of hunger and satiety—anorexia—nervosa, or gastric hysteria, bulimia, parorexia, or perverted sensations of hunger.

Group 3. The secretion neuroses: (1) Irritative forms, hyperacidity, nervous gastroxyusis; (2) depressive forms, deficient secretion.

Besides the above, there occur no doubt, vaso-motor disturbances, but their independent existence can hardly be recognized. It happens, practically, that many of the above disorders may be united, and that some of them may complicate inflammatory or other organic changes. At the same time, many typical examples of the special forms enumerated are on record and are not difficult to recognize.

THE RELATION OF GROWTH OF THE BODY TO ITS ORGANS.

From an analysis of a large number of observations made in the Pathological Institute of Munich, K. Openheimer makes the following deductions (*Jour. Am. Med. Ass.*): 1°. The bodily weight reaches its highest relative standing earlier in females than in males. The weight of the adult man is about twenty times as great as at birth; that of the adult woman eighteen times as great. The length of the body reaches its highest relative point in man at the age of 15 years, when it amounts to 158 cm.; in woman the highest relative point is reached at the same age and amounts to 153.6 cm. 2°. The growth of the lungs surpasses that of the body as a whole at nearly all periods, and especially at the middle period of growth. 3°. The heart increases approximately in proportion to the entire body. 4°. The spleen and kidneys increase proportionately with the heart. 5°. The liver and notably the brain do not develop proportionately with the body. 6°. The relative lack of development in the liver and brain is compensated by the rapid relative increase of fat and muscle, particularly the latter.

TEMPERATURE IN DISEASE.

BY C. COLEMAN BENSON, M. D.

Normal temperature is 98.4°.
Feverishness varies from 99° to 100°.
Slight fever varies from 100° to 102°.
Moderate fever varies from 102° to 103°.
High fever varies from 103° to 105° (imminent danger).
Intense fever varies from 105° to 107° (fatal issue).

The normal temperature of the body in adults is highest on awakening in the morning and lowest at midnight.

It is from 1° to 2° higher in children than in adults, and also lower in the evening than in the morning.

One degree rise in temperature corresponds with an increase of ten beats of the pulse.

A patient who was well yesterday, but has a temperature to-day of 104°, indicates ague or ephermal fever. If 106° it is some form of malarial fever, but *not typhoid.*

If on the first day the temperature rises to 105°-106°, the fever is neither typhus nor typhoid.

In pneumonia, if 101.7°, there is no exudation present; but if from 104°-106,° there is exudation and the attack is severe. Should there be consolidation at the *apex* of either or both lungs, *delirium* will surely be present.

In measles, if the temperature is high when the *eruption has faded,* there are complications.

In typhoid fever, when on any *evening* the temperature does not exceed 103.5°, the case is mild. In the third week, if 104° morning and 105° evening, *there is danger.*

In acute rheumatism, 104° forebodes danger or some complication, as pericardial inflammation.

In jaundice of a mild form, if the temperature *rises,* it indicates a pernicious change.

In puerperal females, increase of temperature shows *pelvic* inflammation.

In tuberculosis, an increased temperature shows advance in the disease or that complications are arising.

A fever temperature of 104°-105° in any disease, indicates that the advance of the disease is not checked and that complications may still occur.

In relapsing fever the temperature rises quickly in the first stage, 104°-105° on the second day, then fluctuates till the day before defervescence, when it attains the highest point,—107°-108°,—from which point it sinks rapidly to 98° as the other symptoms subside. On the fourteenth day relapse occurs and the temperature rises to 104° or 105° or more, to descend as rapidly as before, when convalescence begins.

In continued fevers the temperature is generally less high in the morning than in the evening.

In typhus fever the temperature falls towards night.

Stability of temperature from morning to evening is a good sign.

If a high temperature remains fixed, or rises from evening to morning, the patient is getting worse, but when it falls from evening to morning it is a sign of improvement.

Convalescence is established when the normal temperature, 98.4°, is maintained throughout the day and night.

Cancer lowers the temperature, as also diabetes mellitus and injury of the spinal cord; but cancer of the *stomach* is attended with fever in the latter stages, and also in hepatic cancer when the peritoneum is involved.

Never give quinia with a dry, hot skin, nor opium with a contracted pupil.

The American Medical College of St Louis, Mo.

PRACTICAL HINTS REGARDING CHILDREN.

ALWAYS teach a nurse that a child cannot swallow as long as the spoon is between the teeth; that it is advisable to depress the tongue a brief moment, and withdraw the spoon at once, and that now and then a momentary compression of the nose is a good adjuvant.

The taste of quinine is disguised by coffee, chocolate, and "elixir simplex."

Powders must be thoroughly moistened; unless they be so, the powder adhering to the fauces is apt to produce vomiting.

Inunctions require a clean surface, and are best made where the epidermis is thin, and the net of lymph-ducts very extensive, as on the inner aspect of the forearm and the thigh.

Babies, after having taken opiates for some time, demand larger, and sometimes quite large, doses to yield a sufficient effect.

Febrifuges and cardiac tonics, such as quinine, antipyrine, digatalis, strophanthus, sparteine, convallaria, etc., are tolerated and demanded by infants and children in larger doses than the ages of the patients would appear to justify.

Mercurials affect the gums very much less in young than in advanced age.

The rectum of the young is straight, the sacrum but little concave, the sphincter ani feeble, and self-control is developed but gradually; for these reasons, rectal injection is allowed to flow out or is vehemently expelled. Therefore one which is expected to be retained must not irritate. The blandest and mildest is a solution of six or seven parts of chloride of sodium in a thousand parts of waters which serves as a good vehicle for medicine unless incompatible with the latter. The injection must be made while the child is lying on its side (preferably the left side), not on the belly over the lap of the nurse, for in this position the space inside the narrow infantile pelvis is reduced to almost nothing.

In many cases of intense intestinal catarrh, large and hot (104° to 108° F.) enemata will relieve the irritability of the bowels and contribute to recovery. They must be repeated several times daily. When there are many stools, and these complicated with tenesmus, an injection, tepid or hot, must or may be made after every defecation, and will speedily relieve the tenesmus.—*Prof. Jacobi.*

CHEST PERCUSSION "DONTOLOGY."

BY THOMAS J. MAYS, M. D.

DON'T percuss in a cold room, and always divest that portion of the chest which you examine of all clothing.

Don't undertake to percuss without doing it thoroughly and methodically.

Don't forget that percussion, like all the other methods of physical diagnosis, is but a process by which you compare the resonance, or want of resonance, of one side with the other.

Don't use a hammer and pleximeter in preference to the middle fingers of both hands.

Don't fail to keep the nail of the percussion finger well trimmed.

Don't strike the chest as if you were cracking stones, or committing an assault on your patient.

Don't strike from the elbow, but only from the wrist or knuckle.

Don't strike slantingly, but always perpendicularly to the chest walls.

Don't vary the force of your blows.

Don't allow the hammer finger to remain on the pleximeter finger after the blow is delivered, but allow it to rebound like the hammer of a piano.

Don't disturb the relative position between your ear and the patient's chest more than you can not possibly help, therefore always lay the pleximeter finger in such a direction that the distal end points outward and the central end toward the middle of the body.

Don't percuss over a rib, on one side, and over an intercostal space, on the other.

Don't forget that the percussion pitch is nominally higher over the right than over the left apex.

Don't omit clavicular percussion.

Don't place too much confidence in a single abnormal physical sign.

Don't allow any voluntary muscular tension or stiffness of the patient's chest.

Don't allow the arms to be folded, but direct that they shall hang loosely by the patient's side, with a slight forward inclination.

Don't stand your patient against the wall, or let him lean against any object.

Don't fail to realize that percussion skill depends on constant practice.

Don't neglect to familiarize yourself thoroughly with such high and low-pitched sounds as those given out by percussing the head of the humerus, and the infra-scapular region in health; and also with all the intermediate grades of sound found between these two points.

Don't confine your attention in your percussion practice simply to the human chest, but percuss anything suitable that may come in your way—a wooden table, desk, etc., furnish a variety of sounds for such practice.

Don't forget that occasionally pulmonary consolidation, when located in close proximity to a large bronchus, or to the hollow abdominal viscera, evinces a tympanitic percussion sound.

Don't fail, in cases of complete dullness or flatness at the base of the chest, to mark the upper limit of such dullness in front while the patient is standing; then place him on his back, and ascertain whether the line of dullness changes.

THE THERAPEUTIC VALUE OF MUSIC.

From the time when medical knowledge was first embodied in rules of practice, and probably from a much earlier period, music has held a recognized place in the treatment of disease. Though lauded in connection with the most diverse maladies,—for example, with gout and insanity,—it has for obvious reasons been chiefly effective in dealing with certain forms of nervous disease. This is only what one would expect from its natural action. It can not be named along with many drugs in point of apparent accuracy of result. Its place is not in any ordinary catalogue or pharmacopœia. It belongs rather to that group of natural recreative forces which are active in every healthy life, and which operate against the morbid weakness of any part by increasing the vigor of the whole. In so far as it affects the body, it must clearly do so only through the mind and the nervous system. This accounts for its known value in the treatment of mental disorders. Nor can its obscurer action in different physical states be otherwise explained. By acting as a refreshing mental stimulant and restorative it braces the depressed nervous tone, and indirectly that of the other tissues. Thus there is something to be said for the old custom of exorcising pestilences by the sounds of music. Calmed and inspired by harmony, the tonic energies of will and nerve combine to oppose a wholesome bodily tone to the invading scourge, and to prevent that tissue laxity which has often provided the nidus of disease. A similar process is relied on by those who turn to music, among other diversions, for some relief from the pain of atonic neuralgia. In no class of diseases, however, are we likely to derive so much benefit from the use of so pleasant a remedy as in those affecting the mind itself. In melancholia and allied states of depression its value is generally admitted in our own day. Ancient practitioners were also cognizant of its usefulness in this respect. We must all have felt how suitable is its infinite variety and facility of expression to the changing moods of the sane, and it is, therefore, the less difficult to understand how straying minds are pleased and settled by its charm. Certain it is that its beneficial effect is in this case considerable, and our readers, though possibly unable to acquire a knowledge of the art, should at least possess, and if needful assert in practice, a sense of its therapeutic value.—*The Lancet.*

College of Physicians and Surgeons.

CHICAGO, ILL.

RULES FOR BATHERS.

They are as follows:—

Avoid bathing within two hours after a meal.

Avoid bathing when exausted by fatigue or from any other cause.

Avoid bathing when the body is cooling after perspiration.

Avoid bathing altogether in the open air if after having been a short time in the water it causes a sense of chilliness and numbness of the hands and feet.

Bathe when the body is warm, provided no time is lost in getting into the water.

Avoid chilling the body by sitting or standing undressed on the banks or in boats after having been in the water.

Avoid remaining too long in the water; leave the water immediately if there is the slightest feeling of chilliness.

The vigorous and strong may bathe early in the morning on an empty stomach.

The young, and those who are weak, had better bathe two or three hours after a meal—the best time for such is from two to three hours after breakfast.

Those who are subject to attacks of giddiness or faintness, and those who suffer from palpitation and other sense of discomfort at the heart, should not bathe without first consulting their medical adviser.

THE CAUSE OF SLEEP.

M. Brown-Séquard, as will be seen by an abstract in Dr. Rabinovitch's report on physiology, published in this number of the Journal, combats the theory that attributes the induction of sleep to a change in the state of the intracranial circulation leading to cerebral anæmia. He rests this contention mainly on his having frequently observed a hyperæmic condition of the base of the brain, and especially of the medulla oblongata and the spinal cord, during sleep, and on the regular recurrence of sleep in certain animals that have had the cerebrum removed. In place of the theory of cerebral anæmia he sets up that of peripheral irritation—somewhere and of some sort—exercising an inhibitory action on mental activity, on the action of certain muscles, and perhaps to some extent on the circulation and respiration. As regards their proximate cause, he places both natural and hypnotic sleep on the same footing.

It is to be noted that he admits that contraction of the blood-vessels of the retina and of the cerebral lobes, implying anæmia of the brain, is one of the phenomena of incipient sleep, although he looks upon it—for what reason we are not told—as one of the details that "confirm the existence of irritation." A diminished supply of blood to the brain may, therefore, have something to do with the induction of sleep, even in the light of the considerations brought forward by M. Brown-Séquard. Moreover, it is reasonable to assume that one of his arguments—that of the regular recurrence of sleep in animals deprived of the cerebral hemispheres—proves too much for the theory of inhibition of mental activity, unless it can be shown that mental activity has its seat in some other organ than the brain. Besides, it may well be doubted whether the abolition of mental action is all that goes to make up sleep, even with the addition of more or less inhibition of the cardiac and pulmonary functions, or whether mental processes are altogether in abeyance during sleep, leaving dreams to be accounted for as proceeding from some other part of the economy than the head. In addition, we may ask what the periodically recurring peripheral irritation is, and where it is located, that normally starts the nocturnal inhibition that leads to sleep. Evidently "there are more things in heaven and earth than are dreamed of in our philosophy," and M. Brown-Séquard, granting his demolition of the theory of cerebral anæmia, has not replaced it with one that is beyond cavil.

HYGIENE OF THE EYES.

Dr. Lincoln, of Boston, in *The Annals of Hygiene*, formulates the following rules to be observed in the care of the eyes for school work:—

1. A comfortable temperature, and especially let the feet be warm and dry.
2. Good ventilation.
3. Clothing at the neck loose; the same as regards the rest of the body.
4. Posture erect; never read lying down or stooping.
5. Little study before breakfast or directly after a hearty meal; none at all at twilight or late at night.
6. Great caution about study after recovery from fevers.
7. Light abundant, but not dazzling.
8. Sun not shining on desk, or on objects in front of the scholar.
9. Light coming from the left hand, or left and rear, under some circumstances from in front.
10. The book held at right angles to the line of sight, or nearly so.
11. Frequently rest by looking up.
12. Distance of book from the eye about fifteen inches.

THE FOOD OF AMERICAN AND EUROPEAN LABORERS.

Professor W. O. Atwater, of Wesleyan College, has been lecturing on food economics, and claims to have data which show that the American laborer, by reason of better food, does more work per day than the European laborer. Food is force in potential form. Its amount may be measured in calories or heat units, and a day's food for a healthy man should be sufficient to furnish 2500 to 3000 calories. The dietary of the European laborer, we are told, rarely furnishes 2500 calories; while that of the American furnishes from 3000 to 5000 calories.

The data for demonstrating that American laborers of all classes do more work because they are better fed must be very considerable, in order to satisfy critical examination. It has been abundantly shown that hard labor cannot be performed on an insufficient diet; but it is also known that a sufficient diet is not a difficult or expensive thing to get. A workingman must have a little over 20 grammes of nitrogen and 300 grammes of carbon daily, with water, and the latter practically costs nothing. A half a pound of meat or cheese, with a pound and a half of bread and butter, or farinaceous vegetables, furnishes all the calories needed. And because the American laborer has meat twice daily and plenty of vegetables, it does not follow that he can work more.

Just as much work can be done on a sufficient diet as on an excess. As for the class of laborers who are furnished with daily food representing 5000 calories, representing six or seven pounds of meat daily, they must be highly fed and enviable persons; but whether they can do more work because their diet contains 5000 calories of potential energy may be questioned.

CARLYLE ON THE NOBILITY OF THE MEDICAL PROFESSION.

"I have often said, what profession is there equal in true nobleness to medicine? He that can abolish pain and relieve his fellow mortal from sickness, he is indisputably the usefulest of men. Him savage and civilized will honor; he is in the right, be in the wrong who may. As a Lord Chancellor, under one's horsehair wig there must be misgivings; still more, as a Lord Primate, under one's cauliflower; but, if I could heal disease, I would say to all men and to angels '*en ecce*.'" Another living celebrity has said: "When we regard the rapid and marked progress which our art and science has made during little more than half a century, I feel that we are fully justified in believing that progress in the future will be even more remarkable, and that, with materials for investigation in abundance, with willing and able workers, there can be neither fear nor doubt for the continued advance of the healing art."

DE OMNIBUS REBUS ET DE QUIBUSDAM ALIIS.

He Had Quite a Bill at the Druggist's.—The *Tocsin* gives the following particulars relating to the physicking of a patient in the olden times, the good old times, when people took physic and plenty of it, firmly believing that it did them good. The individual in question, Mr. Samuel Jessup, died May 17, 1817, at Heckington. He was defendant in a trial for the amount of an apothecary's bill at the Lincoln Assizes. The evidence at the trial gives the following details: In twenty-one years (from 1794 to 1816), he took 226,934 pills, supplied by a respectable apothecary in Bottlesford, which gives an average of 10,806 pills a year, or 29 each day. In the last five years preceding 1816, he took the pills at the rate of 78 a day, and in the year 1814 swallowed not less than 51,590. "Notwithstanding this," says the *Tocsin*, "and the addition of 40,000 bottles of mixture, besides the julep, and electuaries, set out in fifty-five closely written columns of the apothecary's bills, he lived to the age of sixty-five years."—*The Hospital Gazette.*

The Doctor's Earnings.—According to Dr. Jarvis' tables, the average of the lives of physicians is fifty-six years. If you begin practice at twenty-four, your active-life prospect will be thirty-two years, and from a thousand to fifteen hundred dollars will represent your average yearly income. Now, were you (through God's mercy) to practice these thirty-two years without losing a single day, and collect (say) eight dollars every day of the time, you would receive but $93,440. Deduct from that amount your expenses for yourself and your family, your horses, carriages, books, periodicals, and instruments; your taxes, insurance, and a multitude of other items for the whole thirty-two years (11,680 days), and then, so far from being rich—you would have but little, very little, left to support you after you naturally reach the down-hill of life, or are broken down in health, and faculties deteriorated, and in need of a physician yourself, through worry, anxiety, and fatigue, in the discharge of your duty.

Dr. McKendrick estimates that in a man of average size there are twenty-two and a half trillions of red blood corpuscles. These would give a superficial area of three thousand one hundred and fifty-one square yards, equal to a square having each side about fifty-six yards in length. Of hæmoglobin there would be present in this one and one-fifth pounds, containing about thirty-nine grains of iron. As twenty-five minims of tincture of iron contains a grain of iron, thirty-nine doses of twenty-five minims each would put into the body an amount equal to that contained in all the blood corpuscles of the body.

A Kansas paper publishes the following unique reminder to delinquent subscribers: "There i$ a little matter that $ome of our ubcriber$ have $eemingly forgotten entirely. $ome of them have made u$ many promi$e$, but have never kept them. To u$ it i$ a very important matter—it'$ nece$$ary in our busine$$. We are very mode$t and don't like to $peak about it."

The Normal Man.—Professor Huxley asserts that the proper weight of man is 154 pounds, made up as follows: Muscles and their appurtenances, 68 pounds; skeleton, 24 pounds; skin, 10½ pounds; fat, 23 pounds; brain, 3 pounds; thoracic viscera, 3½ pounds; abdominal viscera, 11 pounds; blood which would drain from the body, 7 pounds. The heart of such a man should beat 75 times a minute, and he should breathe 15 times a minute. In twenty-four hours he should vitiate 1750 cubic feet of pure air to the extent of one per cent. A man, therefore, of the weight mentioned should have 800 cubic feet of well-ventilated space. He would throw off, by the skin, 18 ounces of water, 300 grains of solid matter, and 300 grains of carbonic acid every twenty-four hours; and his total loss during that period would be 6 pounds of water and a little more than 2 pounds of other matter.—*The Sanitarian.*

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STATE INSANE ASYLUM AT COLUMBUS, OHIO.

THE STARLING MEDICAL COLLEGE AND STATE INSANE ASYLUM AT COLUMBUS, OHIO.

THE State buildings located in Columbus are all architecturally beautiful, and with the exception of Washington, no other city can boast of such large structures or so many.

The State Insane Asylum cost $2,000,000 and will accommodate 1300 persons. It has in connection with it a farm of 300 acres. It is constructed of cut stone and brick, and is situated three miles west of the city, on rising ground, commanding a fine view of the country. It has a complete armament for its own use in private, gas works, water works, engine house, etc. There is also an institution called an Idiot Asylum, which contains on an average about 800 inmates and employs about 150 persons. The Starling Medical school was projected by Lyne Starling who lived a bachelor, but when he died in the fall of 1848, at the age of sixty-five years,

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LYNE STARLING.

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THE STARLING MEDICAL COLLEGE, COLUMBUS, OHIO.

he left $35,000, which was considered a large sum at that time, for the erection of a building,—a noble and well equipped institution, which has now a large museum and a first-class chemical laboratory, and has also associated with it an excellent hospital.

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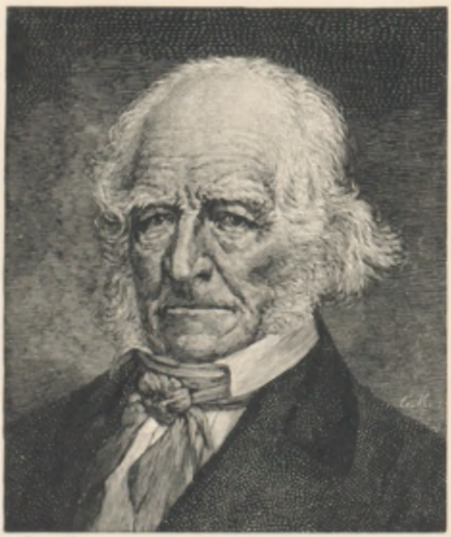
THE HARPER HOSPITAL AT DETROIT, MICHIGAN.

HARPER HOSPITAL AT DETROIT, MICHIGAN.

DETROIT has poor, but its people have read the 25th chapter of Matthew. Last year they relieved 3569 persons at a total expenditure of $27,429. It has also sick and aged and orphaned young, and for these it has provided numerous asylums and a home for the friendless, and various other institutions, the most notable among which is the Harper Hospital, which owes its existence to the munificence of a benevolent but eccentric gentleman, who twenty-five years ago endowed it with his entire worldly possessions, on the condition that the city should pay him a life annuity of $2000. This in the course of five years he voluntarily reduced to $600. The hospital was to be not only a home for the sick, but a school where the youth of the poor should be taught, free of charge, the industrial arts. It does this on a large scale, and its whole working has been most satisfactory.

Within a month from the making of Mr. Harper's magnificent gift the hospital received a similar endowment from a Mrs. Martin, familiarly known as Nancy Martin, who at the time kept a vegetable stand in the market. She gave it all



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WALTER HARPER.

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NANCY MARTIN.

her property, valued at the time at $15,000, with the stipulation that a small house should be built for her at an expense of $450, and she be allowed an annuity of $600. She is said to have been originally a coarse, rough-spoken woman, and on occasions had been known to "swear like a trooper." But the sweet influences of charity soon softened her manners; she relinquished her stand in the market, became more mild and womanly, and in 1875 died in the "full odor of sanctity."

The property which these two persons thus donated is now valued at about $200,000, and the building erected upon it is probably the finest devoted to similar use west of the Hudson. In its reception room hang the portraits of its honored founders, Walter Harper and Nancy Martin.

PRINCETON COLLEGE.

PRINCETON COLLEGE has forced its merits upon the recognition of observing people by its remarkable advances during the last twenty years. It is in no sense disparaging to other institutions to say that Princeton has gained more rapidly, and more substantially, upon its own previous record than any of the great universities within the same time.

Princeton College was founded by royal charter in 1746, and is one of the three oldest colleges in America, Harvard and Yale being the other two. The buildings at Princeton are exceptionally fine. Worthy of special mention is "Nassau Hall," a dignified pile of local stone three stories high and 175 feet long, built in 1756. A graceful belfry in the centre contains the college bell, whose clapper it is the bounden duty of the freshmen to capture early in the term at the risk of their lives. Once secured it is melted and cast into watch chains for all the members of this class. The clock in the belfry is the gift of the class of 1866.

The battle of Princeton was the turning point of the American Revolution, and the British troops were then driven out of this very building by Washington's victorious forces. The marks of cannon balls, bullet holes and historic scratches on window panes, are still exhibited to visitors. Congress has met here with old-time ceremony. A book might be written with incidents relating to "Old Nassau," for fifty years the only college building—students and professors living and studying and assembling within these walls—it is now used almost entirely as a great museum of Paleontology, with laboratories, libraries, and scientific reading rooms. The School of Science building is a grand piece of architecture. It is built of Trenton stone and cost over $200,000.

The scientific apparatus is complete, and all the appliances needed for thorough work and illustrations have been provided to a very full museum of natural history.

Although Princeton has no schools of medicine or law (abstaining from the maintenance of such departments for the present), the courses are so arranged and conducted as to prepare the students more completely for careers in these professions than could otherwise be done. Princeton graduates have distinguished themselves in the New York and Philadelphia law schools, and thus given substantial proof of the excellence of the system.

From Harper's Weekly.

NASSAU HALL OF PRINCETON COLLEGE.

From Harper's Weekly.

JAMES B. ANGELL, LL.D., PRESIDENT OF THE UNIVERSITY OF MICHIGAN.

THE UNIVERSITY OF MICHIGAN.

THE UNIVERSITY OF MICHIGAN is an institution in whose progress not a single State alone, but the whole country as well, may claim an interest. In the early years of the present century Congress made to what was then the Territory of Michigan grants of public lands for the support of a University. When the Territory became a State it was provided in its Constitution that it should assume trusteeship of these grants and the income to be derived from them. The principal of the fund obtained from the sale of lands set apart for the University by the general government is now about half a million dollars. For a time the University depended almost exclusively on this fund for means to meet current expenses, but its rapid growth soon created a demand for further aid. In 1867 the State of Michigan, by its Legislature, began a series of liberal appropriations, which by the year 1885 had amounted to more than $1,200,000.

The University idea was prominently before the people of Michigan while still under a Territorial government, but no organization in permanent form was effected until after the adoption of the State Constitution. The first regular class

From Harper's Weekly.

THE MAIN BUILDING OF THE UNIVERSITY OF MICHIGAN, AT ANN ARBOR.

was admitted in 1841, and four years later eleven young men received the degree of Bachelor of Arts. This small beginning stands in striking contrast with the record of 1888, when the calendar contained the names of 1572 students.

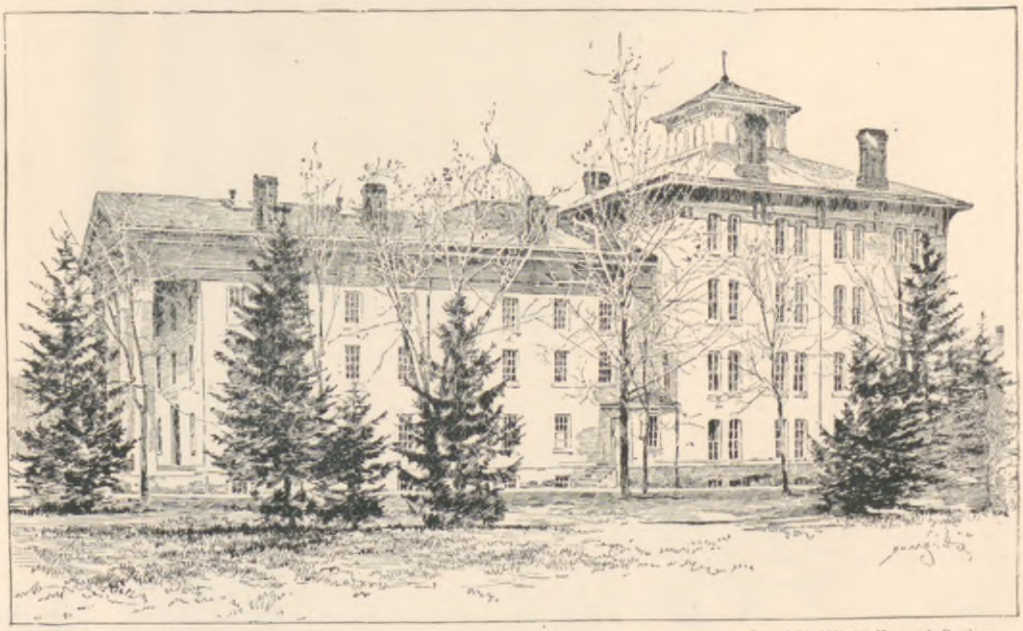
As the University does not stand as an independent educational establishment, but as the recognized head of the State system of public instruction, it has endeavored as far as it can do so, without detriment to the departments previously established, to meet the popular demand for instruction in all branches of study. Recently increased attention has been given to the enlargement of the facilities for instruction in engineering, chemistry, and other technological studies.

The first professional school to have a faculty of its own was the Medical School, organized in 1850; the Law School followed in 1859; the first degrees in pharmacy were conferred in 1869; the Homœopathic College and the Dental College were opened in 1875.

The most striking feature of the University is the wide and liberal spirit in which it does its work. Students are allowed the widest freedom consistent with sound scholarship in pursuing the studies of their choice; they are held to no minute police regulations, but are treated as persons with high and definite aims, from which they are not to be easily diverted. No religious tests are imposed, but devotional exercises are held at stated times, which no one is compelled to attend against his choice; they are all welcome.

Women are admitted to all departments on equal terms with men; the doors of the University are open to all applicants who are properly qualified, from whatever part of the country they may come. More than seventy instructors, besides numerous assistants, are actively engaged in the art of teaching. The library contains 60,000 volumes. The chemical laboratory is surpassed in size and accommodations by few in the world.

Jas. B. Angell, LL.D., the present president, has held his position since 1871, and to his wise and skillful conduct of affairs a large share of credit for the rapid growth in the first decade is conceded by all.



From Harper's Weekly.

THE MEDICAL SCHOOL OF THE UNIVERSITY OF MICHIGAN.

DOSES OF SOME OF THE NEW AND RARE REMEDIES.

Medicament.	Maximal Adult Dose, by Mouth.	
	Single.	*Daily.*
	Grains.	Grains.
Acid, Cubebic,	15	75
" Hydrobromic, dil. (10 pr. ct.)	40 Drops	100 Drops
" Iodic,	4½	18
" Per-osmic,	¾	¾
" Sclerotic,	1	4
" Valerianic,	10 Drops	40 Drops
Adonidin,	1-10	½
Agaricin,	¾	¾
Allyl Tri-bromide,	8 Drops	. . . .
Aloin,	4½	9
Amylene Hydrate,	60	120
Anemonin,	½	1½
Antifebrin,	15	45
Apiol, crystallized (solid Parsley-camphor),	15	60
Apo-Codeine,	½	1¼
Apo-Morphine Hydrochlorate,	1-6	¾
Arbutin,	15	60
Arsenic Bromide,	1-6	. . . .
" Iodide,	1-6	. . . .
Asparagin,	1½	4½
Aspido-spermine Hydrochlorate,	1-20	1-10
Baptisin,	½	1½
Bebeerine Sulphate,	45	150
Benzene (Benzol),	15	90
Berberine Hydrochlorate,	1	4
Boldo-glucin,	60	180
Butyl-chloral Hydrate,	15	60
Cannabine Tannate,	15	30
Cannabinon,	1½	4½
Carbon Bi-sulphide,	10 Drops	40 Drops
" Tri-chloride,	7½	30
Cerium Oxalate,	4½	15
Chrysarobin,	1-12	¼
Cocaine Hydrochlorate,	2¼	7½
Colocynthin,	6	12
Coniine Hydrobromate,	1-12	½
Convallamarin,	1	4½
Cotoin,	1¼	7½
Daturine,	1-64	1-20
Duboisine,	1-64	1-20
Erythrophleine Hydrochlorate,	1-6	½
Ethyl Bromide,	20 Drops	. . . .
" Iodide,	20 Drops	. . . .
Ethyl-oxy-Caffeine,	10	30
Euonymin (Evonymin — the pure Resinoid!),	7½	15
Fluid Extract: Boldo,	15	45
" Cabbage-tree bark (from Andira inermis),	30	90
" Cascara Amarga (Honduras-bark),	60	150
" Cascara Sagrada (Chitem-bark),	60	50
" Damiana (Turnera aphrodisiaca),	75	300
" Golden Seal (Hydrastis),	38	150
" Grindelia robusta,	45	300
" Kava-Kava (Piper methysticum),	10	30
" Lily of the Valley (Convallaria majalis),	7½	23
" Piscidia (Jamaica Dog-wood),	75	225
" Witch-hazel (Hamamelis)	150	. . . .

Medicament.	Maximal Adult Dose, by Mouth.	
	Single.	*Daily.*
	Grains.	Grains.
Fuchsin,	4	7½
Gelseminine Hydrochlorate,	1-12	¼
Guaiacol,	1½	7½
Hasheesh,	1½	4½
Helenin (solid Elecampane-camphor),	4½	15
Helleborein,	½	2
Homatropine Hydrobromate; or Sulphate,	½	4
Hydro-quinone (Hydro-chinone)	12	23
Hyoscine Hydrochlorate,	1-64	1-20
Hyoscyamine Sulphate,	1-64	1-20
Hypnone (Aceto-phenone),	7½	23
Ichthyol,	15	60
Iodine Tri-chloride,	1-5	1¼
Iodole,	3	15
Iridin,	3	7½
Kairin,	15	60
Menthol,	15	75
Mercur-Thymol Acetate,	1-6	2
Mercury Bi-chloride, peptonized,	½	1½
" Cyanide,	½	1½
" Form-amidated,	½	1½
" Phenate (Carbolate)	½	1½
" Salicylate,	½	1½
" Tannate,	½	1½
Methylal,	60	120
Naphthalene,	15	60
Naphthol, Beta-,	15	60
Nickel Bromide,	7½	23
Nitro-glycerine	1-64	1-12
Par-aldehyd,	60	. . . .
Parthenicine,	3	15
Pelletierine Sulphate; or Tannate	7½	75
Pereirine Hydrochlorate,	7½	30
Phen-acetin (para-Acet-phenetidin),	15	30
Picro-toxin,	1-10	⅓
Piperine,	9	18
Podophyllo-toxin,	⅓	1
Potassium Osmate,	¾	¾
Propyl-amine, so-called, see Tri-methyl-amine,	. . . .	. . . .
Pyridine,	. . . .	25 Drops
Quinoline (Chinoline) Tartrate,	30	90
Resorcin,	45	150
Salycin,	30	150
Salol,	30	150
Silver Cyanide,	1-12	⅓
" Iodide,	⅓	1
Solanine,	1½	7½
Sparteine Sulphate,	½	1½
Strophanthin,	1-333	1-166
Sulphonal,	60	120
Terpin Hydrate,	4½	15
Terpinol,	4½	15
Thalline Sulphate,	½	23
" Tartrate,	7½	23
Tincture Strophanthus,	23	75
Tri-methyl-amine (erroneously called "Propyl-amine") — 10 per cent. Solution,	45	150
Urethane,	75	. . . .
Xylene (Xylol),	30	. . . .

N. B.—All the above-stated sizes of dose are calculated for administration by mouth only.

Dosing for Children and Aged Persons.—With all powerful medicaments, the following rules ought to be observed.

A.—*For Children.*—The adult dose (being for persons between 21 and 60 years of age) is to be supposed divided into 21 equal parts, and the child's dose is to consist of as many of these parts as there are years in the child's age.—Ratio: $\left\{\text{Child's dose} = \frac{\text{Adult dose} \times \text{child's years}}{21}\right\}$

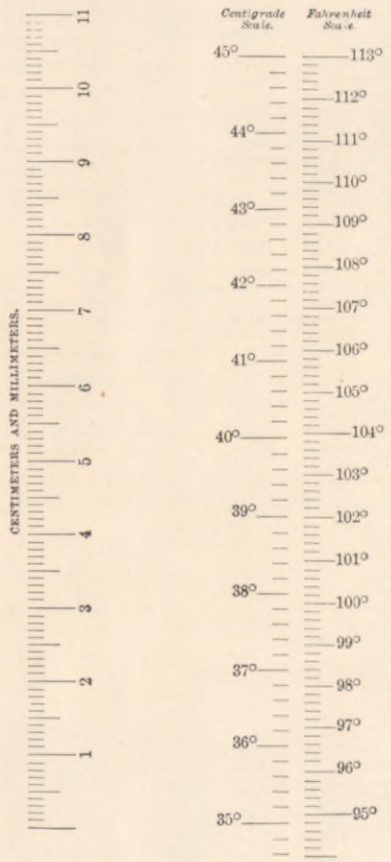
(Thus, for instance, if the proper adult dose of a powerfully active substance were "7 grains," then a proper dose of the same for a child of 4 years would be: Grains 7 divided by 21 and multiplied by 4; or, $\frac{\text{gr. vii} \times 4}{21} = \frac{\text{gr. iv}}{3}$ or, one grain and one-third.)

Remark.—For children it is usually considered advisable to reduce the doses of sedatives and hypnotics somewhat below what they would have to be by the above rule, and to increase the doses of laxatives and cathartics somewhat above what they would be by the rule.

B.—*For Aged Persons.*—The proper adult dose (supposed to be intended for persons between the ages of 21 and 60) is usually to be lessened for persons above 60 years, on the following principle: The dose for the aged is equal to the regular adult dose multiplied by 60 and divided by the patient's age in years.

$$\text{Ratio: } \left\{ \text{Aged dose} = \frac{\text{Adult dose} \times 60}{\text{Patient's years.}} \right\}$$

(Thus, for instance, if the proper adult dose of a powerful medicament were "40 drops," then the proper dose of the same for an aged person of 80 years would be: Drops 40 multiplied by 60 and divided by 80; or, $\frac{\text{gtt. xxxx} \times 60}{80} = \text{gtt. xxx}$; or, thirty drops.



METRIC FLUID MEASURES.

When using the metric system, fluids are preferably prescribed by weight, employing the gram, its multiples and subdivisions, just the same as with solids, thus avoiding the errors due to refraction, adhesion, and inaccurate measuring vessels. For practical purposes, four grams of water may be regarded as equivalent to a fluid drachm of that liquid, and the same may be considered true of tinctures and infusions; syrups, on the average, are about one-third heavier than water, so that a fluid ounce of a syrup will be approximately represented by 43 grams. If preferred, however, fluids may be prescribed by volume in the metric, just as in the present system, using for that purpose the *Cubic Centimeter*, that is, a volume represented by a cube all of whose sides measure one centimeter. An ordinary backgammon die is usually about this size. One cubic centimeter (written 1 C. C.) = 16.231 minims. It is approximately regarded as one-fourth of a fluid drachm.

APPROXIMATE EQUIVALENT OF METRICAL WEIGHTS

For Rapid Reference.

Milligrams.	Grains.	Decigrams.	Grains.
1 (0.001 or | 001)	1/65	1 (0.1 or | 1)	1½
2	1/32	2	3
3	1/22	3	4½
4	1/16	4	6
5	1/13	5	7½
6	1/11	6	9
7	1/9	7	11
8	1/8	8	12½
9	1/7	9	14

Centigrams.	Grains.	Grams.	Grains.
1 (0.01 or | 01)	1/6	1 (1. or 1 |)	15
2	1/3	2	30
3	1/2	3	46
4	2/3	4	61
5	3/4	5	77
6	9/10	6	92
7	1 1/10	7	108
8	1 1/4	8	123
9	1 1/3	9	139

A Kilogram = 2⅛ lbs. Avoirdupois.

APPROXIMATE EQUIVALENTS OF CUBIC CENTIMETER.

0.001 C. C.	=	1/61	minim.
0.01 "	=	⅙	"
0.1 "	=	1½	"
1. *C. C.*	=	15	*Minims.*
4. "	=	1	fluid drachm.
16. "	=	4	fluid drachms.
32. "	=	1	ounce.

1000 C. C. (usually known as a *Liter*) is a trifle more than one quart, wine measure.

MEDICINAL WEIGHTS AND MEASURES.

Pound.		Ounces.		Drachms.		Scruples.		Grains.
lb. 1	=	12	=	96	=	280	=	5760
		℥1		8		24		480
				ʒ1	=	3	=	60
						℈1	=	gr. 20

1 (French) *Gramme* = 16.4204, (Prussian) *Gran* = 15.4340, grs.

Gallon.	Pints.	Fluid ounces.	Fluid drachms.	Minims	Cubic In.
Cong. 1 =	8 =	128 =	1024 =	61440 =	231.
	01	16 =	128 =	7680 =	28.875
		f℥1 =	8 =	480 =	1.8047
			f ʒ1 =	♏60 =	.2256

1 (French) *Litre* = 2.1135 pints.

A glassful or cupful is reckoned to contain about 4–5 f ʒ.

A wineglassful, about 1½–2 f ʒ.

A tablespoonful, of liquid, about ½ oz.; of powder, about 2 dr.

A teaspoonful, of liquid, about 1½ dr.; of powder, about 2½ scr.

A teaspoonful, of magnesia, 10 gr.; of powdered herbs, 1 scr.

A teaspoonful, of salts, sugar, sulphur, ½ dr.

" of metallic oxides, 1–1½ dr.

A drop, of water and watery fluids, about 1 ♏.

" of oils and tinctures, about ½ ♏.

" of chloroform, about ½ ♏.

The Lament of the Cultured Gonococcus.

I.

Where schizomycetes grin in glee,
Where microbes dig their holes,
Where germs feel free to split in three
And exult in their septic souls;
Where the still small sobs of the spores endure,
Where blue bacilli bore,
Where of cultures pure, an adjacent sewer
Will always provide a score—

Some gonococci, duplex and small
(They were born at a picnic the previous fall,
And by agile turn and twist in flight
Had escaped the maw of the phagocyte),
Were mourning, each to the other twin:
"What sort of a hole is this we're in?"

II.

Time was when they lived where their fathers died,
In a urethral columnar cell,
Then woe betide, that "devil" they spied,
When they trisked in Boccacio's "Hell!"
Now, 'twas, "O for a lodge in the vestibule,
Or in glands of Bartholin!"
And 'twas, "O to rule in a Skene's tubule,
For we can't grow on gelatin!"

And 'twas, "O for the grim and fierce delight
Of a duel to the death with the leucocyte!
Once again to laugh in specific pride
At the impotent syringe and germicide!
And to mock, when our stricture fort defied
The charge of the sound and the whalebone guide!"

III.

And 'twas, "O to infect the fresh, fresh youth,
And the rounder, old and gay,
And the jay uncouth, as with Sal or Ruth,
He disports in the new-mown hay!"
And 'twas, "O to breed in the infant's eye,
In the swollen joint as well,
And the facts supply, when deacons lie,
And 'cart-wheel' stories tell!"

"O 'tis woe in a sawed-off tube to split,
And on measly 'spud' to meekly sit!
To see our spores grow weak and lean,
And the venom depart from our ptomaine!
And never a rainbow of promise to see,
In the crescent curve of the arched chordee!"

IV.

"Let the staphylococcus laugh long and loud,
At the sound of our hopeless wail;
Though our head be bowed, no putrid crowd
Can such honor as ours assail!
We've snapped many a streptococcus chain,
Hushed many a bacillus' bray:
"And his search will be in vain who shall search for a stain
On the record we hold to-day!"—

"Come death before a life of shame!
Come death before dishonored name!
And never our words will our acts belie—
We fail to infect for we will not try!
And neither in culture, in mucous or pus,
Has Neisser himself seen flies on us!"

Cincinnati Lancet and Clinic.

Just Do Your Best.

The signs is bad when folks commence
A findin' fault with Providence;
And balkin' 'cause the earth don't shake
At every prancin' step they take.
No man is great till he can see
How less than little he would be
Ef stripped to self, and stark and bare
He hung his sign out anywhere.

My doctern is to lav aside
Contentions, and be satisfied;
Jest do your best, and praise er blame
That follers that, counts just the same.
I've allus noticed great success
Is mixed with troubles, more or less;
And it's the man who does the best
That gits more kicks than all the rest.

—*James Whitcombe Riley.*

Song of the Bacilli.

We're an army of bacilli,
And germs and micrococci,
Most numerous to behold!
We've been brought into distinction
To cause the quick extinction
Of people in the world.
But sadly do we rue the time
When scientists "caught on" our crime,
So ancient, yet so bold!

In former days of medicine,
'Twas not thought necessary in
Bad cases of disease,
For a doctor to decide, and tell
What made his patient ill, or well,
Unless it him should please.
And so an "All-wise Providence"
Was made to stand the consequence
Of causing their decease.

But in these later days of sense,
The students must be most intense
In seeking after wisdom.
Knowledge microscopical,
And also biological
(And others still to come),
Is now required by boards of health.
But medics often pass by stealth
Three years' curriculum!

So great and urgent was the call,
For knowledge of the causes all,
Which blight the strong and healthy,
That savants undertook to find
The reasons for the great decline
In health, of poor and wealthy.
So well their task they set about,
They were not long in finding out
Our family so stealthy.

And now Pasteur, and Koch, and Klein,
Sternberg, and Cohn, and Laveran,
Can call us all by name;
They know our family history,
Our pedigree, posterity,
And just from whence we came.
For years we've fought with ghoulish glee,
Though small, and very hard to see,
We've got there just the same.

But now our tricks, so dark, are o'er,
And what we've done with germ and spore
Is fully comprehended;
The doctors know our tendency.
Of us they've made a list, you see,
To text books we're appended.
Professors make nice diagrams
Of us, as well as cryptograms.
Alas! our dream is ended.

—*Transactions Ohio Sanitary Association.*

The Why.

Germs in the air,
Germs in the sea,
Germs wherever one may be,
Germs and to spare
Growing in me,
German Germs from Germany.

Whate'er we say
Or write or think,
Germs will wriggle in the ink.
On tongues they'll play,
And "culture" drink
From each minute cerebral chink.

—*Boston Medical and Surgical Journal.*

The Old Oaken Bucket.

With what anguish of mind I remember my childhood,
Recalled in the light of a knowledge since gained;
The malarious farm, the wet, fungus-grown wildwood,
The chills then contracted which since have remained;
The scum-covered duck-pond, the pig-sty close by it,
The ditch where the sour-smelling house drainage fell;
The damp, shaded dwelling, the foul barnyard nigh it,
But worse than all else was that terrible well,
And the old oaken bucket, the mould-crusted bucket,
The moss-covered bucket that hung in the well.

Just think of it! Moss on the vessel that lifted
The water I drank in the days called to mind,
Ere I knew what professors and scientists gifted
In the water of wells by analysis find:
The rotting wood fibre, the oxide of iron,
The algæ, the frog of unusual size,
The water impure as the verses of Byron,
Are the things I remember with tears in my eyes.
And to tell the sad truth, though I shudder to think it,
I considered that water uncommonly clear,
And often at noon when I went there to drink it,
I enjoyed it as much as I now enjoy beer.
How ardent I seized, with hands that were grimy,
And quick to the mud-covered bottom it fell;
Then reeking with nitrates and nitrites, and slimy
With matter organic, it rose from the well.

Oh! had I but realized, in time to avoid them,
The dangers that lurked in that pestilent draught,
I'd have tested for organic germs and destroyed them
With potassic permanganate ere I had quaffed;
Or perchance I'd have boiled it, and afterward strained it
Through filters of charcoal and gravel combined;
Or, after distilling, condensed and regained it
In potable form, with its filth left behind.
How little I knew of the dread typhoid fever
Which lurked in the water I ventured to drink;
But since I've become a devoted believer
In teachings of science, I shudder to think.
And now, far removed from the scenes I'm describing,
The story for warning to others I tell,
As memory reverts to my youthful imbibing,
And I gag at the thought of that horrible well,
And the old oaken bucket, the fungus-grown bucket,
In fact, the slop bucket that hung in the well.

The City of Sanitas.

Its walls of tiles enamelled,
Shine in the sun's bright sheen,
And the broad, deep moat about them
O'erflows with Listerine.

When the approaching traveller
Draws near the city's gate,
A sanitary picket
Demands his purpose straight;
And if he fain would enter
That city in its pride,
He must first be stripped and ducked
In kreolin germicide.

They'll shave his head and body,
Ere the inner gate they ope,
Using freely of a lather
Made from strong carbolic soap;
While the razor used to further
Their depilatory zeal
Has been sterilized by heating,
Till it fairly makes him squeal;
And by aid of hose and stopcocks,
And tubes appropriate,
They wash out all his cavities
With corrosive sublimate.

This done, he passes onward
To a laboratory near,
Where he's carefully inspected
By a microscopic seer.

When this critical inspection
Is eventually passed,
They ope' the inner gateway,
And let him in at last.

Clad in a shirt aseptic
Of asbestos silicate,
And outer germ-proof tunic
In triple nickel-plate,
He treads the polished surface
Of the broad and cleanly street,
Which sterilized char-women
With naphthaline keep sweet.

High overhead an awning
Of antiseptic gauze
Strain the outer air of microbes
Who'd violate the laws;
And at nearly every corner,
With microscope at eye,
Biological policemen
For errant germs do spy.

A Physiological Charade.

Pronounced as one letter, and written with three,
Two letters there are, and two only in me;
I am double, am single, am black, blue, and gray;
I am read from both ends and the same either way;
I am restless and wandering, steady and fixed,
And you know not one hour what I may be the next;
I melt and I kindle, beseech and defy;
I am watery and moist; I am fiery and dry;
I am scornful and scowling, compassionate, meek.
I am light, I am dark, I am strong, I am weak.
I am sluggish and dead, I am lively and bright,
I am sharp, I am flat, I am left, I am right;
I am piercing and clear, I am heavy and dull,
Expressive and languid, contracted and full;
I am careless and vacant, I search and I pry,
And judge, and decide, and examine, and try;
I'm a globe, and a mirror, a window, a door,
An index, an organ, and fifty things more.
I belong to all animals under the sun,
And to those which were long understood to have none.
By some I am said to exist in the mind,
And am found in potatoes, and needles and wind.
Three jackets I own, of glass, water, and horn;
And I wore them all three on the day I was born;
I am covered quite snug, have a lid and a fringe,
Yet I move every way on invisible hinge.
A pupil I have, a most whimsical wight,
Who is little by day, and grows big in the night;
Whom I cherish with care as part of myself;
For in truth I depend on this delicate elf.
Who collects all my food, and, with wonderful knack,
Throws it into a net which I keep at my back;
And, though heels over head it arrives, in a trice
It is sent up to table all proper and nice.
I am spoken of sometimes as if I were glass,
But then it is false, and the trick will not pass.
A blow makes me run, though I have not a limb;
But I neither have fins nor bladder; I swim.
Like many more couples, my partner and I
Will look cross at each other, and shy;
Yet still, though we differ in what we're about,
One will do all the work while the other is out.
I am least apt to cry, as they always remark,
When trimmed with good lashes or kept in the dark.
Should I fret and be heated, they put me to bed,
And leave me to cool upon water and bread.
But if hardened I grow, they make use of the knife,
Lest an obstinate humor endanger my life.
Or you may, though the treatment appears to be rough,
Run a spit through my side—and with safety enough.
Like the boys who are fond of the fruit and their play,
I am seen with my ball and apple all day.
My belt is a rainbow, I reel and I dance;
I am said to retire, though I never advance.
I am read by physicians as one of their books,
And am used by the ladies to fasten their hooks.
My language is plain, though it cannot be heard,
And I speak without ever pronouncing a word.
Some call me a diamond; some say I am jet;
Others talk of my water, or how I am set.
I'm a borough in England, in Scotland a stream,
And an isle of the sea in the Irishman's dream.
The earth without me would no lovliness wear,
And sun, moon, and stars at my wish disappear;
Yet so frail is the tenure, so brittle my joy,
That a speck gives me pain, and a drop can destroy.

LACTOPEPTINE

(POWDER.)

LACTOPEPTINE contains the five active agents of digestion—Pepsin, Ptyalin, Pancreatine, Lactic Acid, and Hydrochloric Acid—combined in the same proportion as they exist in the human system. These digestive agents comprise all known substances employed by nature in the preparation of food for assimilation.

DOSE.—Ten to twenty grains. In cases of extreme debility of the digestive organs, doses of half a teaspoonful to a teaspoonful of Lactopeptine may be given.

LACTOPEPTINE is acknowledged to be the most reliable and valuable therapeutic agent in the treatment of all diseases due to digestive derangements. It is especially indicated in Dyspepsia, Cholera Infantum, Vomiting in Pregnancy, Chronic Diarrhœa, Constipation, and depraved condition of the blood resulting from imperfect digestion.

LACTOPEPTINE ELIXIR.

Elixir Lactopeptine represents Lactopeptine in an elegant liquid form, combining the Digestive Properties of Lactopeptine with the Stimulating Effects of an Agreeable Aromatic Cordial, acceptable to the most delicate and irritable stomach.

DOSE.—A dessert to a tablespoonful after each meal.

It is indicated in all forms of digestive ailments in which Lactopeptine Powder has proven of value, especially in Dyspepsia, Indigestion, Diarrhœa, Vomiting in Pregnancy, and Cholera Infantum.

Its liquid form, prompt action, delicious flavor, and agreeable taste, have placed it foremost in the rank of palatable, reliable remedial agents. The results obtained from its use are invariably most gratifying to physician and patient.

The result of an actual test of Elixir Lactopeptine will be convincing proof that we have succeeded in suspending Lactopeptine in an alcoholic menstrum without injury to its digestive properties.

LACTOPEPTINE, Elixir with Bismuth.

A most valuable remedy in the various forms of Dyspepsia, Constipation, and Nervous Debility.
Containing: Lactopeptine, 32 grains; Am. Citrate Bismuth, 8 grains, per fluid ounce.
DOSE.—Two teaspoonfuls after each meal.

LACTOPEPTINE, Elixir with Strychnia and Bismuth.

A most valuable remedy in the various forms of Dyspepsia, Constipation, and Nervous Debility.
Containing: Lactopeptine, 32 grains; Strychnia, $\frac{1}{75}$ grain; Am. Citrate Bismuth, 8 grains, per fluid ounce.
DOSE.—One teaspoonful after each meal.

LACTOPEPTINE, Elixir with Calisaya.

This preparation is particularly indicated in cases of General Debility, accompanied with loss of appetite. Used in Dyspepsia and Febrile Diseases of a Malarious form.
Containing: Lactopeptine, 32 grains; Calisaya Bark, 50 grains, per fluid ounce.
DOSE.—One tablespoonful after each meal.

LACTOPEPTINE, Elixir with Calisaya, Iron and Bismuth.

This preparation will be found highly beneficial in Dyspepsia, Anæmia, Female Debility, and as a general tonic. The addition of Lactopeptine will be found of the utmost value in all cases of enfeebled digestion.
Containing: Lactopeptine, 32 grains; Calisaya Bark, 40 grains; Pyrophosphate Iron, 12 grains; Am. Citrate Bismuth, 2 grains, per fluid ounce.
DOSE.—One to two teaspoonfuls after each meal.

LACTOPEPTINE, Elixir with Gentian and Chloride of Iron.

An elegant preparation, combining the virtues of Gentian and Chloride of Iron with Lactopeptine. A valuable remedy in General Debility, Anæmia, Constipation, and Chronic Diarrhœa.
Containing: Lactopeptine, 32 grains; Gentian, 8 grains; Proto-Chloride Iron, 8 grains, per fluid ounce.
DOSE.—One to two teaspoonfuls after each meal.

LACTOPEPTINE, Elixir with Phosphate of Iron, Quinia and Strychnia.

A powerful general and nervous tonic, combining all the valuable properties of Phosphorus Iron, Quinia and Strychnia with Lactopeptine, the most important digestive agent known. Indicated in cases of extreme Debility, Phthisis, Constipation, Anæmia, Neuralgia, and Fever and Ague.
Containing: Lactopeptine, 32 grains; Phosphate Iron, 4 grains; Phosphate Quinia, 4 grains; Phosphate Strychnia, $\frac{1}{8}$ grain, per fluid ounce.
DOSE.—One to two spoonfuls after each meal.

LACTOPEPTINE, Liquid.

Represents the secretion of the alimentary canal in non-alcoholic, elegant liquid form.
It is indicated in Dyspepsia and diseases from imperfect digestion, and is particularly valuable in many forms of Diarrhœa, Indigestion, Vomiting, General Debility, Constipation, and Phthisis.
DOSE.—Two to four teaspoonfuls immediately before or after each meal.

LACTOPEPTINE, with Beef, Iron and Wine.

A valuable nutritive and blood tonic, combined with Lactopeptine. Indicated in Dyspepsia, Anæmia, Constipation, Chronic Diarrhœa, and all wasting diseases.
Containing: Lactopeptine, 16 grains; Extract of 2 ounces of Beef; Sherry Wine, 1 ounce; Citrate of Iron, 4 grains, per fluid ounce.
DOSE —One tablespoonful after each meal.

LACTOPEPTINE Syrup with Phosphates.

Combines the Digestive properties of Lactopeptine with the Constructive and Vitalizing properties of the Phosphates.
It is indicated in the treatment of Pulmonary Phthisis, Mental and Nervous affections, General Debility and Convalescence, when associated with Digestive weakness; it is also of great value to nursing mothers, teething children, and those requiring medication in wasting diseases.
Each fluid ounce contains Lactopeptine, 32 grains; Phosphate Iron, 8 grains; Phosphate Lime, 8 grains; Phosphate Soda, 8 grains; Phosphate Potash, 8 grains.
DOSE —Two teaspoonfuls after each meal.

PHOSPHO-CAFFEIN COMP.

(GRANULAR EFFERVESCING.)

Formula for each dessertspoonful:—Caffein. Acidi Phosphorici aa, grains, ss. Antipyrin. Ext. Apii. Grav. dulc. (Celery), aa grains, i. Sodium Bromide, grains, v.

The satisfactory results produced by **Phospho-Caffein Comp.** in *Headaches*, *Neuralgia*, *Insomnia*, *Neurasthenia*, and general *Nervous Irritability*, are not due to any one ingredient, but to the happy effect of the combination. A thorough series of comparative tests have demonstrated the superiority of the above formula over any other in the market.

The usually unpleasant after-effects of the sedatives are fully overcome by the reconstructive properties of the other ingredients, leaving the brain and nervous system in a normal condition.

A simple trial of PHOSPHO-CAFFEIN will convince you that it is the happiest, the most effective and the most palatable combination that has ever been offered to the medical profession in the above affections.

We are daily receiving letters from the medical profession similar to the following, referring to the beneficial effects of PHOSPHO-CAFFEIN in Headaches, Insomnia, etc.

We feel warranted in saying that there is not more than one case in a hundred in which it will fail to produce the desired result.

STERLING, ILL., January 19th, 1889.

Gentlemen:—Allow me to congratulate you upon the efficient and elegant combination, **Phospho-Caffein Compound**, for headaches, neuralgia, insomnia, neurasthenia, and general nervous irritability. I have never found its equal. I have had the satisfaction of getting early and satisfactory results, and therefore cheerfully recommend it to the general practitioner as a valuable combination.

Very truly yours,

JNO. B. CRANDALL, M. D.,
Health Commissioner, City of Sterling,
President, U. S. Examining Board of Surgery for Pensions.

PHOSPHO-CAFFEIN is put up in eight and four-ounce bottles.

LIQUID PEPTONOIDS.

BEEF, GLUTEN, and MILK, Digested.

AS A NUTRIENT, this preparation will be taken and assimilated when all other food substances are rejected.

AS A PEPTOGEN (exciting the secretions that increase the appetite), we are confident it is not equaled by any other preparation.

AS A STIMULANT and Tonic, its effects are immediate. Its use is indicated as follows:—

Convalescence from all diseases, Pulmonary Affections, Fevers, Pneumonia, Weak Digestion, Gastritis and all Stomach Ailments, Diarrhœa, Dysentery and all Intestinal Diseases, Phthisis, Cholera-Infantum, Marasmus, Sea Sickness, Diabetes, Excessive use of Alcoholic Stimulants, and in debility resulting from any cause. Also, a valuable adjunct in voyages and camp life.

Correspondence Solicited.

THE ARLINGTON CHEMICAL CO.,

YONKERS, N. Y.

BEEF PEPTONOIDS.

CONCENTRATED BEEF AND MILK WITH GLUTEN.

A Nitrogenous Food, composed of the Nutritive Constituents of BEEF (partially peptonized), MILK, and GLUTEN from WHEAT, presented in a POWDERED FORM.

1st. In an analysis of sixteen concentrated food products by the Government Chemist **Beef Peptonoids** was found far more nutritious than any.

2d. There is no food preparation that compares with it in nutritive value.

3d. It is partially prepared for assimilation, and therefore makes less demand upon the digestive powers of the gastric juice.

4th. It contains 95 *per cent.* of nutritious matter, 30 *per cent.* being albuminoid.

5th. It contains **twenty-five times** more nutritive matter than Liebig's Extract of Beef or similar productions.

6th. One ounce of **Beef Peptonoids** contains more nourishment than five pints of beef tea prepared from eighty ounces of beef.

7th. Beef tea, and similar preparations to Liebig's, contain but little else than the osmazone and stimulating properties of the Beef and are, therefore, almost valueless as constructives.

8th. **Beef Peptonoids** is the only preparation rich in nitrogenous matter that is pleasant to the taste.

9th. It has the advantage of being easily and quickly prepared for use.

10th. *One ounce is equal in nutritive properties to about ten ounces of* **Beef, Wheat, and Milk.**

BEEF PEPTONOIDS is manufactured from the very best **Beef**, the finest quality of **Milk**, and **Gluten** from wheat. All the manipulations in the production of this preparation are carried on with as strict regard to cleanliness as any food placed on *your own table.*

BEEF PEPTONOIDS is much less expensive than any food production in the market, for the reason that it is far more concentrated.

THE USE OF BEEF PEPTONOIDS IS INDICATED AS FOLLOWS:

Convalescence from all diseases, Pulmonary Affections, Fevers, Pneumonia, Weak Digestion, Gastritis and all Stomach Ailments, Dyspepsia, Diarrhœa, Dysentery, and all Intestinal Diseases, Phthisis, Cholera-Infantum, Marasmus, Vomiting in Pregnancy, Sea Sickness, Diabetes, Excessive use of Alcoholic Stimulants, Per Rectum in all cases where the Stomach cannot digest the food, and in debility resulting from any cause. Also, a valuable adjunct in voyages and camp life.

LIQUID PEPTONOIDS, WITH COCA

There is no question of the great value of Coca as a stimulant in many diseases, but whenever it is used alone there must be a corresponding reaction. If the brain and muscles are stimulated there must be a waste of tissue, and this waste must be repaired by assimilation and reconstruction, which can only take place by rest and nutrients.

Acting upon this theory, we combined Coca with LIQUID PEPTONOIDS, believing that the nutritive constituents in LIQUID PEPTONOIDS, being perfectly digested and ready for immediate absorption, would resupply the waste so quickly that no reaction from the stimulating properties would occur.

The results of repeated trials have confirmed our belief in every instance.

Our experiments convince us that Coca should seldom be used, to get its best effect, except when combined with some nutritive elements ready for assimilation.

The depressing effect of the reaction from the use of Coca or any stimulant, goes very far towards neutralizing the benefits derived, and we are confident the above is the only way to prevent it.

DOSE.—For an adult, one tablespoonful three to six times a day; children in proportion.

Correspondence Solicited.

THE ARLINGTON CHEMICAL CO.,

YONKERS, N. Y.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