

ENTERED AS SECOND-CLASS MAIL MATTER IN THE HARTFORD POST-OFFICE.

THE QUARTERLY JOURNAL

OF

INEBRIETY.

PUBLISHED UNDER THE AUSPICES OF THE AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIATES.

T. D. CROTHERS, M.D., Editor,
Hartford, Conn.

Vol. XI. JANUARY, 1889. No. 1.

HARTFORD, CONN.
THE CASE, LOCKWOOD & BRAINARD CO.,
PRINTERS.

EUROPEAN AGENCY:
BAILLIERE, TINDALL & COX,
20 KING WILLIAM STREET, ON THE STRAND, LONDON, W. C.

TABLE OF CONTENTS.

JANUARY, 1889.

AN ADDRESS ON THE MORBID ANATOMY AND PATHOLOGY OF CHRONIC ALCOHOLISM. DR. J. F. PAYNE,.....	Page 1
PATHOLOGICAL CHANGES IN CHRONIC ALCOHOLISM. DR. L. D. MASON, SEMI-ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY,.....	42
ABSTRACTS AND REVIEWS:	
A CLINICAL STUDY OF ALCOHOLIC NEURITIS,.....	63
REPORT OF FRENCH COMMISSION TO INVESTIGATE THE CONSUMPTION OF ALCOHOL IN FRANCE,.....	67
INEBRIATE ASYLUM AT HEIMDAL, NORWAY,.....	71
NOTICES OF BOOKS,.....	75
EDITORIAL:	
PROGRESS IN 1888,.....	83
THE RELATION OF PULMONARY CONSUMPTION TO INEBRIETY,.....	85
PROGRESS IN ENGLAND,.....	86
HABIT CASES,.....	88
CLINICAL NOTES AND COMMENTS:	
HISTORICAL SKETCH OF THE AM. ASSOC. FOR CURE OF INEBRIATES, TO MEDICAL MICROSCOPISTS,.....	95
SOME PRIVATE ASYLUMS AND HOMES,.....	98

A PRIVATE HOME

for the care and treatment of neurotics from alcohol, opium, and other causes. A limited number of both sexes received, and each one receives the direct personal care of the physician. Location and accommodations excellent, and rates low.

Address L. W. BAKER, M.D., Sup't, BALDWINVILLE, MASS.

REFERENCES BY PERMISSION.— Drs. A. L. Ranney, C. L. Dana, E. C. Mann, Clark Bell, Esq., New York City; Dr. Nathan Allen, Lowell, Mass.; Dr. Ira Russell, Wrentham, Mass.; Frank B. Sanborn, Esq., Concord, Mass.; T. D. Crothers, M.D., Hartford, Conn.; C. H. Hughes, M.D., St. Louis, Mo.

KENSETT ON THE SOUND.

AN ESTABLISHMENT FOR THE

Private Care and Treatment

of persons suffering from Mild Forms of Insanity, Nervous Diseases, and those Addicted to the use of Stimulants and Narcotics. Medical and personal attention, careful and constant. Greatest consistent freedom. Accommodations ample. Grounds shaded and secluded. Surroundings very healthful and attractive. Facilities for driving, bowling, bathing, fishing, and boating.

Address,

EDWIN EVERETT SMITH, Formerly Med. Dir. State Asy. Morristown, N. Y.

P. O. Rowayton. Tel. Dar en. R. R. station, Five Mile River, Conn., 40 miles from N. Y.

A CURE FOR INEBRIETY.

EFFERVESCENT

BROMO (W. R. Warner & Co.) POTASH.

R. Caffein, 1 grain; Brom., 20 grains
in each teaspoonful.

USEFUL IN

Nervous Headache, Sleeplessness,
Excessive Study, Migraine,
Nervous Debility, Mania,
and as a remedy in Sea
Sickness and Epilepsy.

DOSE.

A heaping teaspoonful in half
a glass of water, to be repeated
once after an interval of thirty
minutes if necessary.

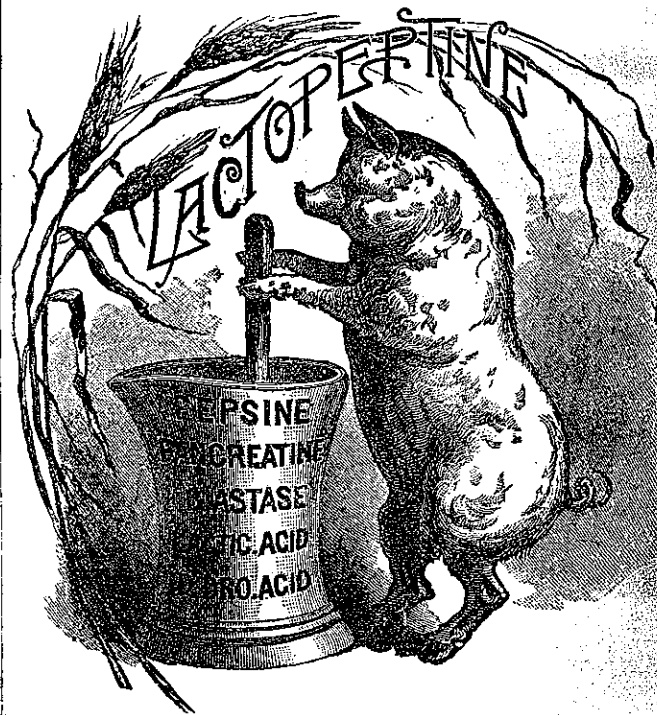
It is claimed by prominent
specialists in nervous diseases,
that the Bromide Sodium is
more acceptable to the stomach
than the Bromide Potassium.
An almost certain relief is ob-
tained by the administration of
this Effervescent Salt. It is
used with advantage in indi-
gestion, the Depression fol-
lowing alcoholic and other
excesses, as well as Nervous
Headaches. It affords speedy
relief in Mental and Physical
Exhaustion.



PREPARATIONS SUPPLIED BY ALL LEADING DRUGGISTS.

LACTOPEPTINE is a skillfully prepared combination of Meat-converting, Fat-converting and Starch-converting Materials, acidified with the small proportion of Acids always present in the healthy stomach. It is a most valuable digesting agent, and **SUPERIOR TO PEPSIN ALONE.**—Prof. ATTFIELD, Ph. D., F.R.S., &c., Prof. of Practical Chemistry to Pharmaceutical Society of Great Britain.

The most eminent and successful Practitioners consider LACTOPEPTINE the Standard remedy in the treatment



of all those ailments, in which deficient digestion is the direct or indirect cause of pathological conditions.

LACTOPEPTINE.

The most important Remedial Agent ever presented to the Profession for
**DYSPEPSIA, VOMITING IN PREGNANCY,
 CHOLERA INFANTUM,**
 CONSTIPATION, and all diseases arising from imperfect nutrition.

LACTOPEPTINE IN CHOLERA INFANTUM.

We desire to direct special attention to the great value of LACTOPEPTINE in Cholera Infantum, and other intestinal troubles incident to the heated term.

Send address for our Medical Almanac, containing valuable information.

THE NEW YORK PHARMACAL ASSOCIATION,
 P. O. Box 1574. NEW YORK.

THE
QUARTERLY JOURNAL OF INEBRIETY.

Subscription, \$2.00 per year.

Vol. XI. JANUARY, 1888. No. 1.

This Journal will not be responsible for the opinions of contributors, unless indorsed by the Association.

AN ADDRESS ON THE MORBID ANATOMY AND
PATHOLOGY OF CHRONIC ALCOHOLISM.

*Delivered at the Opening of a Discussion at the Pathological Society of London,
December 4th, 1888.*

BY JOSEPH FRANK PAYNE, M.D.,

Vice-President of the Society; Physician to St. Thomas's Hospital.

MR. PRESIDENT AND GENTLEMEN:— When the Council of this Society did me the honor to ask me to open the discussion on this occasion, I accepted the task perhaps with a somewhat inadequate appreciation of the vast extent of the field which now lies opened out before me. It is only since I have been endeavoring, to the best of my ability, to prepare for the duty devolving upon me, that I have thoroughly realized the multiplicity and variety of the facts which have to be dealt with, and the extreme difficulty of compressing them into a moderate compass.

I must, therefore, ask your indulgence while I appear before you, not in the character of an explorer bringing home the results of travel in new and untrodden ways, but rather in that of a geographer trying to sketch a rough outline map of a country hardly as yet completely explored or surveyed.

The extent of our country, however, though wide, is not unlimited. We are not going to discuss the action of drinks on the human body generally, nor all the diseases to which habits of excess can give rise, nor, still less, the moral or economical consequences of such habits, but solely the material changes which the use of alcohol in excess has been actually shown to produce in various tissues and parts of the body.

HISTORICAL INTRODUCTION.

First Period: Ancient Medicine. — Before entering on the main topic, I will, however, ask your attention for a few minutes to some rough notes on the history of the subject. This begins in comparatively modern times, for ancient medicine knew almost nothing of morbid anatomy. Doubtless, so long as wine has been known, so long has there also been known excess in wine; and among the Greeks even, more especially among the Romans, such excesses were neither rare nor harmless. Hence we find scattered notices in the ancient medical writers showing that the symptoms of inebriety were observed, and some graphic descriptions and some good clinical rules, founded on these observations, might be quoted; but, so far as I know, there is nothing in any ancient writer bearing on the morbid anatomy of the disease.

Second Period: Rise of Morbid Anatomy. — This is, of course, equally true of mediæval medicine, on which, therefore, we need not linger. It was not till the sixteenth century that morbid anatomy began a separate existence as a science, first under the protection of her elder sister, normal anatomy; gradually, in the seventeenth century, assuming a more independent position. But among the many excellent scattered observations on the structure of diseased organs, with which the medical literature of this century abound, there are very few bearing on the action of wine or strong drinks.

As an instance of the most advanced knowledge of the age on such subjects, we might well quote our own Harvey,

not only as a man of genius, but as a skilled physician, well versed in all the learning of his time. In Harvey's MS. lectures, lately published in *fac simile*, I have found nothing directly referring to inebriety, but there are certain observations which would naturally have led to this being spoken of had its importance been recognized. For instance, in speaking of the anatomy of the liver, he describes twelve different cases or examples of diseased liver which he had himself seen; one was "russet, hard, contracted, absque sanguine," which seems like a small cirrhotic liver. Another, according to the rough notes, was "russetish, ingentem et durum, plane scirrus tumor, absque fere sanguine, asperâ superficie;" a large, hard liver, evidently like a scirrhus tumor, almost bloodless, and with a rough surface, which could hardly have been anything else than cirrhosis. He also says that such livers are found in cases of dropsy (fol. 39). In another place he discusses dropsy generally, as being said by Fernellius to depend upon the liver, but himself inclined to the opinion that the dropsy is the cause of the morbid change in the liver rather than the contrary. Dropsy may arise, Harvey says, by drinking more than the kidneys can get rid of, so at length even the fleshy parts are turned into water; but so long as any of the liver remains, the patient will live and not die.

This seems to bear upon our subject, but, really, I think it is founded upon the common belief at that time that dropsy could be caused by drinking too much water; a fault which consequently the bold spirits of the time were much on their guard against. Altogether these notes make one regret the loss of the observations on morbid anatomy which Harvey is said to have collected.

Harvey's MS. was written in 1616. Not long after this some notices of alcoholic diseases begin to appear, but the only lesion referred to this cause by writers of the seventeenth century was cirrhosis of the liver, and its consequent ascites. The earliest case of this kind which I can find is of the date 1626, though published many years later in the great storehouse of such observations, Bonet's *Sepulcretum*

(Geneva, 1679), where it is quoted from Gregorius Horstius. A German nobleman, of intemperate habits, suffered for three years from jaundice, and was found to have the liver hardened, as was evident to the touch. He improved under treatment, but having "indulged his genius" for several weeks, he was attacked with epistaxis, followed by dropsy of the belly and scrotum. The latter was punctured, and two measures (? quarts) of fluid escaped, but the abdominal swelling did not diminish, and after some months he died suddenly. On opening the body ten measures of fluid were found in the abdomen. The liver is described as "scirrhum et induratum, necnon exsuccum instar ligni putredine corrupti," that is, scirrhus, hardened, and juiceless, like rotten wood. The mesenteric veins were filled with gelatinous material, surrounded by clotted blood, which could be pulled out to the length of an ell and a half.*

Surely this, as a clinical and pathological picture, could hardly be improved. A hard liver, jaundice, ascites, epistaxis, and sudden death with thrombosis of the portal system — scarcely any important feature is wanting.†

Several cases might be quoted from the same work, but I will only give one more.

A French soldier, returning from the wars in a thirsty mood, came upon a pool of stagnant water, where he first bathed, and of which he then drank a mighty draught. This he took the first opportunity of correcting with abundant libations of strong wine, and the remedy was so often repeated that he fell into a severe fever, followed by dropsy of the abdomen and legs. The belly was tapped repeatedly, and in all 168 ounces of fluid were drawn off, of which the curious observation was made that, first and last, it always smelt like the stagnant pond-water of which the patient had so incautiously drunk. After death there was still some

* Sepulcretum, p. 1052.

† In the same case there is a very good description of xanthelasma in the form of tubercles on the knees and elbows, etc.

water in the peritoneum, and the liver was found as hard as wood.

In these cases and others strong wine was clearly recognized as the source of evil, but other causes were not excluded, as Bonet records the case of a boy who contracted fatal scirrhus of the liver and ascites by eating too many figs. Then there is another curious history of a certain glutton who ate as well as drank to excess, and whose liver was found after death of an enormous size — clearly an instance of the other type of alcoholic liver, the fatty, such as we might find now in a robust and plethoric brewer's drayman.

English medical literature of this period yields few valuable observations. One by Walter Harris, the correspondent and friend of Sydenham, author of a book on the diseases of children, may be worth mentioning. In the work just mentioned he relates the case of a gentleman, aged 36, who had brought himself to an insensible necessity of drinking sack several times a day until he fell into an irrecoverable consumption. On opening the body after death the liver was found "so thoroughly boiled with constant heat that a sound liver could not well be more boiled over the fire than his was by the use of sack. It was in color and brittleness the very same as a long-boiled liver can be." Although dropsy is not named, probably it is meant that there was ascites also. Harris observes that sack does much more harm than French wines; and, though the reason he gives for this is a strange one, it shows that the causation of cirrhosis was beginning to be understood.

There is still one observation of dropsy connected with liver disease which I will venture to quote, although its dependence upon alcoholic drinks quite escaped the surgeon who has recorded it, one John Browne, surgeon to St. Thomas's Hospital. The account, which appears in the *Philosophical Transactions*, vol. xv, 1685, is entitled: "A Remarkable Account of a Liver, appearing Glandulous to the Eye," and is accompanied by a figure, "accurately taken down by Mr. Faithorn," an eminent artist and engraver of

the day, which I have thought worth copying to show to the society.

“The person was about 25 years of age, a soldier in one of His Majesty’s regiments here in town, who contracted his distemper by drinking much water, when he could not stir from his duty, and catching cold at nights in being upon the guard. He was under the care of our physicians for some time, by whose directions his swellings did by times abate; but afterwards it was observed, that the method which had been beneficial to others, had not here the like success, his swellings returning upon him as before, so that there was nothing more now to be thought of, but a paracentesis, which operation, however, is judged very hazardous, by reason of the time of year, and for that the patient was very much emaciated; yet he being so much swelled, that it was uneasy to him to lie in his bed, he importuned us very often, and with great earnestness, that the operation might be performed. Whereupon, a paracentesis by the physician’s consent and directions, was made by me, whereby we drew from the patient about three pints of brinish liquor, and within four days after as much more; the next day, morning, he dyes, and his death, as found upon dissection, was partly occasioned by a mortification upon his scrotum and penis.

“This operation was performed to the satisfaction of the physicians and chirurgeons that saw it, and by it the patient had some ease for the present. Upon opening the body I believe I took out about twenty-four quarts of water; he had a large inflammation upon the peritonæum, all his other inward parts not much disaffected, except the liver. Its magnitude was not extraordinary, but seemed rather less than usual, but that which was very remarkable (and I think the like was scarce ever observed by any author) and seems much to confirm the opinion of the learned Malpighius, is this: It consisted in its concave, convex and inward parts of glands which (with the vessels) made up one whole substance thereof; these glands contained a yellowish ichor, like so many pustulæ, and was, I suppose, part of the bilious humor

lodged in the same, though otherwise the liver between the glands was of its usual reddish color. In the bladder of gall we found a soft friable stone, but otherwise nothing considerable further in that part."

A private in the Guards is hardly likely to have acquired dropsy by drinking water, and there can, I think, be little doubt that the so-called "glandular structures" were the ordinary soft bile-stained masses, separated by fibrous tissue, which we find in cirrhosis of the liver. And the figure, allowing that it is drawn in a formal and conventional manner, appears to me to represent the same. However, it is left to the judgment of the Society; but as being, if I am right, the first published figure of cirrhosis of the liver, it has some historical interest.

Third Period: Use of Distilled Spirits. — We have now seen what the seventeenth century contributed to the morbid anatomy of alcoholism. A new period was now about to begin, that in which distilled spirits came into use as a beverage. With this, new and more severe kinds of alcoholic disease began to appear,

macies et nova februm

Terris incubuit cohors,

and, but for this disastrous invention, I am convinced that our programme for discussion to-night would be very much shorter than it is.

It was at the beginning of the eighteenth century that distilled spirits began to be generally drunk. The art of distillation, of course, was very much older, and was practiced in London at least in the sixteenth century, if not earlier; but, up to the time now spoken of, distilled spirits were chiefly used in medicine, and were for a long time very costly. But towards the end of the seventeenth century they became much cheaper, so that in 1678 a pint of Nantes brandy cost about sixpence. When the use of such drinks became common I do not know, but in 1724 we find the College of Physicians making a public representation as to the

evils of spirit drinking. At this time gin was so cheap in London that a person could intoxicate himself for one penny. A duty was imposed in 1736, and other laws made to check the practice of spirit drinking. The name of the Rev. Stephen Hales, the physiologist, ought to be mentioned in a medical discussion for his efforts in this cause. It is also clear that alcoholic diseases increased, and were more observed by the medical profession, but the morbid anatomy of the subject was little advanced, at least in England, till the end of the eighteenth century. Erasmus Darwin made some good observations on the symptoms of drunkenness, but has only contributed to morbid anatomy in the statement that pigs fed on grains from distilleries get diseased livers.

Baillie described cirrhosis under the name of tubercles of the liver, and declared it to be a disease *sui generis*, different from scirrhus.

J. C. Lettsom first noticed some of the symptoms of alcoholic paralysis, and James Jackson, of Boston, America, gave, in 1882, a very good account of a disease resulting from the use of ardent spirits, which he calls arthrodynia, which is evidently the same.

But all the knowledge of this period is summed up in the classical work of Magnus Huss on *Alcoholismus Chronicus*, translated from Swedish into German in 1852. Huss describes very carefully the morbid changes of all parts of the body met with in drunkards; but, with regard to the nervous system, it is noteworthy that he regarded the disturbances of these parts as being unaccompanied by any change in structure, and hence as being symptoms of a certain kind of poisoning. It is to these that he applied the name, then used for the first time, of chronic alcoholism, and some of his descriptions have left little to be added to.

Fourth Period: Era of Pathological Histology.—The most conspicuous advance on the subject since the work of Huss has been the demonstration of minute changes in various parts of the nervous system affected by alcoholic disease. At the same time the histology of other organs has been

studied, the identity of the minute changes found in different parts has been demonstrated, and gradually the uniformity of the action of alcohol throughout the whole body has become clearly manifest. We are now able to look upon alcoholism as a form of poisoning, and to compare it with the action of other poisons, especially with metallic and other so-called irritants. The history of alcoholism must come to an end here, for it would be difficult to separate it from the exposition of different branches of the subject.

ALCOHOL AS A POISON.

I have now to consider the question, In what sense is alcoholism poisoning; or, in other words, in what sense is alcohol a poison?

Since we must here evidently look upon poisons in a somewhat wider sense than a purely medico-legal one, perhaps I may be permitted to quote a pathological definition of poisons which I have given elsewhere: * "A poison is a substance capable of injuring the body, either by causing damage to the tissues or by producing functional disturbance." On this basis I divide them into two classes, namely, tissue poisons and functional poisons. I will take the latter first. A functional poison disturbs the mode of action of the tissue elements without permanently altering their composition. Hence their action is transitory, and ceases when they are eliminated from the body. Most functional poisons are called narcotic or neurotic, because their most conspicuous action is on the nervous system. But some such poisons—for instance, opium—affect animals without a nervous system, and possibly even plants, so that their action is general. Substances like quinine, which affect protoplasm, though without showing any special predilection for the nervous system, and hence sometimes called protoplasmic poisons, are also included.

But it may be worth while to say that I do not use the term poison as a term of unqualified condemnation. It only

* A Manual of General Pathology, page 378.

means something capable of producing injury, not necessarily doing so. All metallic salts, nearly all drugs, and many substances used as food are in this sense poisons; but we do not on that account deny their usefulness when properly employed. It would be as absurd to condemn alcohol as to condemn common table salt because a large dose of either of them may be fatal. But to pursue this subject further might be dangerous; I return, then, to the old track.

It is quite clear that alcohol is a functional poison of the narcotic class. Its action on the brain shows the gradations of stimulation, overaction, inhibited action, and actual narcosis. These effects, unless positively fatal, are transitory. But it is also clear that this is not the whole of its injurious effect; since, if the functional disturbance be often repeated, the brain itself will come in the end to be damaged. But it may be supposed this damage is caused by the excess or repetition of the functional disturbance. Such an explanation will not, however, apply. Some organs, such as peripheral nerves, are damaged, in which no functional disturbance from the immediate action of alcohol can be traced. Hence we conclude that alcohol is also a tissue poison damaging the structure of the tissue elements. This effect is not seen after a single dose, even a fatal dose, at least so far as is known, but only after repeated action of the poison. When its action is perceptible it is quite comparable to that of the so-called irritant, especially metallic, poisons, such as lead, arsenic, antimony, etc., with phosphorus, and even mineral acids. It is now recognized that these substances, if absorbed, act on all or most tissues of the body which they reach in proportion to the degree of concentration in which they may be present, and to the susceptibility of the different parts. This is also true of alcohol. It is carried by the blood to all parts (having been detected in the brain and various organs), and acts most powerfully in the first instance on the parts which it reaches with the least amount of dilution, that is, the stomach and liver. In the second place, it acts on the nervous tissues as being more vulnerable than the rest. Again,

the influence of concentration in relation to the tissue damage is seen in the fact that alcohol in a dilute form injures the tissues much less than the same amount in a concentrated form, though the narcotic effect may be the same.

Another law of tissue poisons, is that they all have, within certain limits, the same action, or at least there are certain modes of action common to all. These common modes of action belonging to all tissue poisons, I will endeavor to state, and then see whether alcohol acts in the same way.

The first effect of such poisons is seen on the more vulnerable or parenchymatous elements, namely, nerve, epithelium, muscle fibre. On these parts, their action is essentially necrotic, producing, if in a low degree, parenchymatous degeneration; in a higher degree, actual necrosis, though if the injury be not too severe, repair is possible. This is true of arsenic, antimony, sulphuric acid, and, with some modification, of phosphorus. I would submit that this is also true of alcohol, which produces degeneration, or ultimately necrosis, of mucous membrane of stomach, liver-cells, nerve-fibres, nerve-cells, and muscle fibres.

Another effect of all tissue poisons, if sufficiently concentrated, is to injure the blood-vessels, causing exudation and cell migration—that is, inflammation as generally understood. It is obvious that this is true of all irritant poisons. If chronic, this inflammation sometimes results in hyperplasia of connective tissue. I submit that concentrated alcohol acts on the stomach, for instance, to which it is directly applied, in the same way; setting up acute inflammation. The action of alcohol, however, is never quite so intense as that of some metallic poisons, since it never produces suppuration, nor has it an actually corrosive action. Its continuous or chronic action is to produce connective tissue hyperplasia, fibroid changes, or cirrhosis.

Besides these two modes of action, alcohol has one almost peculiar to itself: that of causing accumulation or infiltration of fat, in various parts of the body, especially where such ac-

cumulation naturally takes place, as in liver, omentum, subcutaneous tissue. Phosphorus is like alcohol in this respect, and so is, to some extent, arsenic. This change may be called "steatosis." It is explained, apparently with reason, as due to deficient oxidation, or impeded cell-respiration, the alcohol or phosphorus being oxidized in place of the fat, which should be burnt up in the cell. I would ask, are there any objections to this explanation?

I would suggest the relations of fatty infiltration to true fatty degeneration as an interesting, though difficult subject of inquiry and discussion. The difference in well-marked conditions is obvious. A liver cell, or connective-tissue cell loaded with fat may be healthy, while a fattily degenerated cell is one of which the protoplasm is already altered in structure. But is it not possible that accumulation of fat may destroy the cell in the end, and thus pass into degeneration? If the respiration of a cell is sufficiently impeded, will the cell die as an individual does under the same circumstances? Since alcohol appears to cause true fatty degeneration of some parts, as well as mere adipose accumulation in others, the question is particularly interesting here. This action of alcohol can hardly be called poisonous, since it may end in nutrition.

To sum up. The action of alcohol on tissues or tissue elements is threefold: (1) as a functional poison; (2) as a tissue poison or destructive; (3) as a checker or oxidation; and in these respects it may be paralleled by other substances called poisons, and by others which are generally considered innocuous. These views of the action of alcohol are put forward with the object of inviting criticism or correction. It is very probable that they may be in some respects one-sided or faulty.

I had intended to give some account of the morbid changes produced by administering alcohol to animals, but find that time will not permit.

MORBID CHANGES PRODUCED BY ALCOHOL IN VARIOUS ORGANS.

Since it is obviously impossible to speak of all the organs which may be altered, I shall confine my remarks to a few, especially the liver and the nervous system, taking the morbid changes in these parts, as types of the effects produced in the organs generally.

Effects of Alcoholism as seen in the Liver.— It is generally recognized that one effect of alcohol is to produce accumulation of fat or steatosis in the liver. This change is produced especially by dilute forms of alcohol, and in those who are well fed. The explanation has already been suggested. Only one question occurs to me respecting this condition: Does it ever pass into cirrhosis? Are there not large livers, with a large amount of fat, which show commencing cirrhosis? Or does the fatty change in some way shield the liver tissues from the more serious and irritative action of the spirit? The accumulation of fat is, so far as it goes, evidence of the destruction of some alcohol, if the explanation given above be correct.

Cirrhosis of the Liver.— It would seem as if no pathological process were better known or explained in a more satisfactory way than this. It is generally accepted that concentrated forms of alcoholic drinks, brought into the stomach, are absorbed into the portal vein, and carried to the liver, where inflammation of the interstitial stroma is set up, by which new fibrous tissue is produced. In consequence of the pressure of this tissue, and its subsequent contraction, the liver cells are compressed and destroyed, and are found in various degrees of degeneration, loaded with fat, yellow granules, and so on.

To this explanation, I am inclined to demur. I would ask, Is a liver ever found with healthy hepatic cells and an inflamed stroma? In the very earliest stages of cirrhosis, are not the cells decidedly degenerated? Is it not more responsible to suppose that the injurious action of alcohol is exerted simultaneously on both parts of the organ; and that, if so, the parenchymatous elements, being more vulnerable than

connective tissue, would suffer first? Dr. Beale urged some years ago that the change is essentially atrophic, not inflammatory.

I am also led to raise this question by consideration of a certain very rare form of degeneration of the liver, which is really, I think, produced by alcohol, though the connection has not been recognized. I mean that called in England acute red atrophy. (In Germany the name "red atrophy" is often given to what we call the nutmeg liver.) It is generally admitted to be nearly allied to the acute yellow atrophy, but differs from it, in some respects, besides color. The organ is much reduced in size; the liver cells, as in yellow atrophy, show advanced degeneration and necrosis. Other parts of the organ are of a deep red color, with little or no liver tissue, and consist chiefly of connective tissue and capillaries deeply engorged, inflamed with infiltration of leucocytes, and showing new formation of fibrous tissue. This short description, founded on a paper by Dr. Moxon in our *Transactions*, and on the only case which I have seen, proves, I think, that the same changes are displayed in an acute form, as cirrhosis shows in a chronic form. The connection with alcohol is perfectly clear, though it was not brought out by Dr. Moxon, nor has it been insisted on in the other cases brought before the Society. We have three cases in all; Dr. Moxon's, where two brandy bottles were found under the patient's pillow; Dr. Cayley's, in a drinker of spirits, and Dr. Carrington's, which occurred after hard drinking for six weeks. The last I had the opportunity of examining, as a member of the Morbid Growths Committee, which gave it the same name as I have done. Dr. Cayley, indeed, suggested that the atrophic process supervened on a chronic cirrhosis; but, taking the three cases together, it would seem that the parenchymatous and interstitial parts of the organ were concurrently affected; the former undergoing, as the usual law is, atrophy and necrosis; the latter showing ordinary inflammation. But if there was any difference in order of time, the parenchyma would be likely to

suffer first. I suggest the same explanation for common cirrhosis, and shall return to the same point in speaking of the nervous system.

Another question of interest bearing on cirrhosis is, why is it so comparatively rarely found in the bodies of drunkards. Peters found it in four or five cases only, out of seventy persons who died from the excessive use of ardent spirits. What other factor is concurrent with alcohol in producing it? Is it ever set up by the action of any liquors other than distilled spirits, or strong wine, such as sherry?

EFFECTS OF ALCOHOL ON THE NERVOUS SYSTEM.

While the functional disturbances produced by alcohol on the brain are the most familiar evidence of its action, and, when excessive, have long been recognized as the most deleterious of its results, the actual textural changes produced by it have only been demonstrated in comparatively recent times.

The demonstration of organic changes in the nervous system began, as was natural, with the brain, and with observations of alterations visible to the naked eye. I will first speak of changes in the meninges.

The dura mater has been very frequently observed to be thickened, the Pacchionian bodies largely developed. Vascular congestion has been frequently described, but the conditions immediately preceding death, and the manner in which the necropsy is made influence so decidedly the amount of blood contained in this part, that the observation has not any very great value. More rarely, a special change of the dura mater has been described—namely, chronic pachymeningitis, sometimes in the form of the so-called pachymeningitis hæmorrhagica, or hæmatoma of the dura mater. This curious condition has been explained by Virchow, as produced by a combination of exudative inflammation with hæmorrhage. It is certainly sometimes connected with atrophy of the brain. This is among the rarer results of alcoholic poisoning, though it is described by Lancereaux,

Greenfield, Magnan, and others, as occurring in cases of chronic alcoholism and delirium tremens, and is also found in chronic dementia, and other cases in asylums. Without discussing fully the origin of this condition, I will only say that hæmorrhage into the arachnoid cavity is certainly the most important factor, and capable alone of producing the appearances in question, as is shown by such cases as that recorded by Dr. J. W. Ogle, where the immediate cause was injury in an alcoholic person. Hæmorrhagic pachymeningitis has also been produced artificially in dogs by poisoning them with alcohol in even as short a time as four weeks.

The visceral arachnoid and pia mater must necessarily, for purposes of pathology, be considered together. Thickening and opacity are the most constant changes observed, but in certain cases there is much vascular congestion, with small patches of ecchymosis. But the one most frequent appearance in the subarachnoid spaces, as well as in the arachnoid cavity, and to a certain extent in the internal cavities of the brain, is excess of serum. This is so marked that those accustomed to *post mortem* examinations would generally say that a drunkard's brain is a wet brain.

Now, it is hardly necessary to point out that a similar condition is very generally met with in the brains of old persons; it is a senile condition. And both in chronic alcoholism and in old age, the cause of this accumulation of fluid is the same; namely, it comes from atrophy of the brain-substance. The convolutions look small, the sulci deep, and in most cases the pia mater is easily removed.

If it be granted that atrophy of the brain is at least a common result of alcoholism, though not a distinctive one, it yet remains for consideration what the nature of the wasting process is, whether one of simple atrophy, or some special form of degeneration leading to diminution of size.

The answer to this appears to be that there is no special kind of degeneration. The nerve cells are sometimes said to be granular, but in general, no change is described as at all characteristic of alcoholism. Some observers go so far as to

say that the cortical gray matter is very little affected; and one (Willie) refers the degenerative changes almost entirely to the medullary substance. On these points, we hope for information from those who have made cerebral pathology a special study.

In a few instances, however, more pronounced changes are met with in the cerebral cortex. The pia mater is adherent to the convolutions, portions of the gray matter being torn off with it. On microscopical examination, patches of degeneration and sclerosis are seen. The inner surface of the ventricles again presents a rough and granular appearance; sometimes with fibrous outgrowths. These are, in fact, the lesions found in the brain, in cases of general paralysis, or paralytic dementia.

The relation of chronic alcoholism to general paralysis is a difficult and abstruse question, on which different opinions have been expressed by different observers, among those who have had large experience in such diseases. It is only in special practice, or special institutions that such experience can be obtained. What I venture to say on this subject is, therefore, said rather in the way of suggestion.

That so called general paralysis, or paralytic dementia, not now a very uncommon disease, often has for one of its factors excessive indulgence in alcohol, can hardly be disputed. But if I take the statistics of general paralysis on the one hand, I do not find any very large proportion of cases regarded as solely or mainly due to this cause, nor, on the other hand, among the sequelæ of final stages of chronic alcoholism, does general paralysis occupy a conspicuous place. The conclusion seems to be that general paralysis is distinct from chronic alcoholism, and that for the production of the former out of the latter, some additional cause is necessary.

Such a cause I believe to be excessive functional strain. The three factors of general paralysis are alcohol, functional strain, and in many cases, congenital incapacity to bear strain; in short, a disproportion between functional activity

and power of resistance, especially in the higher cortical centers and the tracts connected with them. I emphasize this suggestion because it appears to confirm the conclusion arrived at on other grounds, that the effects of alcohol on the nervous system, and even on the brain, are independent of its functional effect on the nerve cells, but are those of a tissue-poison, acting directly on the protoplasm of various parts. At the same time, it remains rather difficult to understand why alcohol so seldom produces inflammation or sclerosis in the brain, the organ which is most susceptible to its physiological effects.

The general subject of the relation of general paralysis to alcohol is one on which I hope we may receive more information from those whose field of observation in asylums has included many cases of each disease.

Changes in the Spinal Cord.—I now pass to the changes produced by, or ascribed to, alcohol in the spinal cord. These are not numerous, or frequently observed. Before the period of microscopical examination, the spinal cord was universally said to be healthy in necropsies of alcoholic persons. Of late years, a few cases have been recorded in which there was sclerosis, or degeneration of certain tracts, especially the posterior columns, or posterior part of the lateral column (Magnan).

When attention was drawn to the occurrence of paralysis, especially in the form of paraplegia, in chronic alcoholism, it was thought naturally that this would be due to disease of the spinal cord, but subsequent research has not quite confirmed this expectation. More constant morbid changes have been found in nerves. Nevertheless, in a certain number of cases, alterations have been detected in both. When the alcoholism has passed into paralytic dementia, changes in the cord have been found accompanying the changes before described in the brain. At the same time, we have cases (I speak from my own experience) of what is thought to be acute myelitis due to excessive drinking. Are there any records of *post mortem* appearances in such cases?

Changes in the Peripheral Nerves.—Although the actual changes produced by alcohol in the nerves have only lately been observed, the symptoms now referred to them have been longer known, though referred originally to a lesion of the spinal cord. Dr. Wilks was, I think, the first in this country to give a clear description of these symptoms under the name of alcoholic paralysis.

Here I must venture to depart a little from the plan laid down, and say a word or two about the clinical aspect of the nervous disease, especially as it is as yet not universally recognized by the profession.

The earliest symptoms are disturbances of sensation, and, in the first place, hyperæsthesia. There may be peculiar sensation (paræsthesia), such as numbness, tingling, or feeling of pins and needles, or burning, and sensations of boring and stretching. There may be actual pain, but not usually continuous. Later on, all these disturbances give place to anæsthesia, which is often observed to be present in particular areas. Difficulty in locating sensation, and retardation in the transmission of sensation have also been described. All these symptoms are evidently referable to cutaneous nerves, but the deeper nerve trunks and muscles are often tender on pressure. The special senses are very rarely affected. If we consider the phenomena relating to muscles, we find a very prominent symptom, and usually an early one, though sometimes absent, is inco-ordination and loss of muscular sense. The knee-jerk is lost at an early stage, and Dr. Gowers refers this phenomenon, apparently with justice, to loss of the muscular sense.

All these phenomena constitute the condition of alcoholic ataxia, which may come on before there is actual paralysis of motion, and may remain, as I can state from personal observation, when actual paralysis, once present, has passed away, though it is probably always accompanied by muscular weakness. It is distinguished from tabes dorsalis, or what is called locomotor ataxia, by several characters, especially by absence of all symptoms connected with the pupil of the eye,

or with the sphincters. Next, if the affection continue, and become more severe, we have the stage of actual motor paralysis. In this there will be entire loss of motor power in the muscles, sometimes quite local, sometimes in all four limbs. The paralyzed muscles soon lose faradic irritability, and become impaired in galvanic irritability.

Now, I think it is quite clear that the symptoms, of which the above is a bare outline, might be referred to injury of peripheral nerves.

Take first the case of the cutaneous nerves, the function of which is mainly efferent or sensory. The first result of slight injury to a nervous structure, if it do not pass a certain degree of intensity, is to cause its substance to be more easily decomposed — that is, to produce an apparent, or, at least temporary, exaltation of function, which, in a sensory organ, is expressed as hyperæsthesia. A continuance or higher degree of the same injury will produce total loss of conducting power or anæsthesia. Whether this injury affects nerve endings, or nerve trunks, or both, is a question not yet entirely decided. It is evident that paræsthesia or irregular sensations may also result from injury to sensory nerves.

Now let us consider the case of the muscular nerves (a term which I prefer to that of motor nerves, at least for the present purpose). These nerves have a twofold conducting power: one efferent, transmitting motor impulses; another afferent, transmitting the muscular sense. The sensory or afferent function is assigned to special fibres, which are said to have a special origin. This statement my knowledge is quite inadequate to enable me either to confirm or reject; but for the present purpose it is enough that there are fibres having this function. It would seem as if these fibres were affected by a slighter form of injury than that which is necessary to cause actual motor paralysis. At all events, an injury of these fibres would produce all the symptoms of ataxia, and an injury of the efferent motor fibres would cause paralysis.

Certain other symptoms, which sometimes complicate alcoholic paralysis, are explainable by similar injury of other nerves. One is acceleration of the pulse. This is very notable in many cases. In one of my own, which ended in recovery, the pulse was, for a long time, not less than 140, independently of occasional fever, and still more rapid pulses have been observed. In a case of a confirmed drinker, whose pulse was usually about 180, and who died of thrombosis of the portal and mesenteric veins, with hardened liver, I found after death nothing to account for the rapid action of the heart. It is clear that a slight degree of injury to the vagus nerve would, in the absence of other causes, be sufficient to account for this acceleration of the heart; but when this observation was made, the connection was not thought of.* Paralysis of the diaphragm, from affection of the phrenic nerve, may not occur.

It would not be enough to show that nerve changes would account for these symptoms. It must be shown that no other cause accounts for them, and that the nerve changes actually exist. The only other conceivable cause of all the symptoms described would be an extensive lesion of the spinal cord, affecting both motor and sensory tracts. Such a lesion is not known to occur in these cases, and has in many cases been proved not to be present. Moreover, the supposed nerve lesions have been, in many instances, found in the mixed nerves, including both cutaneous and muscle nerves. In one instance, at least, similar changes have been detected in the trunk of the vagus (Finlay) when the pulse was 160. It is to Lancereaux that the credit belongs, both of suggesting this explanation, and of establishing its truth.

I will only venture to speak of one point in the pathology of what is called neuritis, and this with reference to other forms of the same lesion, such as diphtheritic, and the various toxic forms.

The changes described in the nerves thus affected, come under the heads parenchymatous and interstitial. The first

*Path. Trans., xxi, 228.

include cloudy or granular appearance of the nerve fibres, segmentation of the myeline and collection of it in round and oval masses, sometimes absence of the axis-cylinder, and other similar changes; in fact, all the evidence of degeneration, ending in necrosis.

The interstitial changes are seen in the perineurium or endoneurium, either diffused, or mainly external. These tissues may show an increase in the number of nuclei, or infiltration with leucocytes, and are generally thickened. In some cases, actual increase of connective tissue has been described. These changes are what are usually described as inflammation, leading to hyperplasia.

Very generally, both these changes are found together, but sometimes one group of changes predominates, sometimes the other; and thus the lesion is sometimes described as degeneration, sometimes as inflammation, and there has been a sort of controversy as to by which name it should be called, and which should be regarded as the original or primary change. I would submit that the parenchymatous and interstitial lesions are both produced by the direct action of alcohol, and illustrate the general law that when a toxic or injurious agent affects a mixed organ of the body, it is likely to produce degeneration or necrosis of the parenchymatous elements (nerve, muscle-fibre, epithelium), and what is generally called inflammation (either of the constructive or suppurative form) in the connective tissue, just as in the liver. This does not exclude the possibility of there being a parenchymatous neuritis, such as has been observed in experiments on animals by Ranvier and others, in which there would be formation of new nerve fibres. But as the nerves have never been removed during life from cases recovering, but only after death from fatal cases, in which there was presumably no repair, the nerve fibres show pure degeneration or necrosis.

It is also to be remembered that the change found in certain parts of the nerves may be a secondary degeneration, caused by interruption of the nervous currents by lesion of

the nerve at another point. But when interstitial change and nerve degeneration are present, it is not necessary to suppose that the nerve fibres suffer secondarily, being compressed by the hyperplastic connective tissue. On the contrary, there are instances in which the nerve degeneration must be the primary change, and the connective tissue change a consequence of it. For instance, this must be the case in the so-called secondary degeneration of conducting tracts in the spinal cord or nerves, in consequence of injury to the ganglionic tissue with which they are connected. It is clear that the break of communication will at first affect only the nerve fibres, and not the connective tissues surrounding them. Changes in this tissue, that is to say, sclerosis, perineuritis, or interstitial neuritis, must therefore be a consequence of the nerve atrophy. How this leads to connective tissue proliferation is a difficult question. But I have elsewhere attempted to show that it may be partly a consequence of the diminished resistance which favors overgrowth of the tissue which remains; and secondly, that when the nerve fibres are dead, the connective tissue deals with them as with a foreign body. It tends to form a barrier of fibrous tissue around them as if to encapsulate them.

In ordinary neuritis, we could only prove which was the initial stage of the disease, by examining specimens at different stages, which has not been done, so far as I know. Hence, since we do not know the necessary order of the changes, it is more reasonable, on the whole, to regard them as simultaneous results of the action of alcohol, and to speak of the whole process as alcoholic neuritis.

I can only just allude to the remarkable fact that similar nerve-changes have been demonstrated in chronic arsenic-poisoning, in lead-poisoning, in paralysis from bisulphide of carbon, and in the disease called kakke, while there is great reason to think that the nerve changes of diphtheria and other specific diseases are due to the same morbid process. All these will be forms of multiple peripheral neuritis.

Changes in Other Organs.— I have chosen the liver and the nervous system as typical instances of the injurious effects of alcohol on tissues ; and there would be no time to speak of other organs in the same way. I can only, therefore, briefly mention what appear to be the most important points.

With regard to diseases of the kidney, one cannot but feel that the connection of different forms of Bright's disease with drinking requires further elucidation. The general belief in the profession certainly is, or was, that drinking to excess is a rather frequent cause of this disease. But Dr. Dickinson's observations and statistics tell so strongly against this view that further observations are needed, if it is to be maintained.

The relation of alcoholism to diseases of the generative organs is a very interesting, though little studied, subject. One of the oldest beliefs respecting the effects of excessive drinking, is that such habits diminish fertility in both sexes, but especially in the male. The Rev. Stephen Hales, in the eighteenth century, even sought to show that the natural increase of the population of London was seriously lessened by the use of distilled spirits. The number of christenings (taken as corresponding to births) in London, fell off from 19,370 in 1724, to an average of 14,320, in the three years preceding 1750. Whether these statistics rest on a sound basis, I cannot say, but statements to the same effect have often been made. It is also stated that procreation, when one or both parents are inebriated, results in the birth of idiotic or deformed children, and Dr. Langdon Down has brought some such cases before the Society. It has never been shown whether this depends on any organic change in the testicles, or the semen, or on the temporary inebriation. A few observations have been made on the condition of the male generative organs by Lancereaux and others. Corresponding conditions in the female sex would, there is every reason to believe, be equally injurious to the offspring. Little positive information has, however, been collected as to

the state of the generative organs in female drinkers. Dr. Matthews Duncan's able paper in this subject, in the *Edinburgh Medical Journal*, April, 1888, probably contains all that there is at present to say.

The organs of respiration appear, from clinical observation, to be affected by alcoholism. Certainly, we often meet with laryngeal and bronchial catarrhs, which are chronic and obstinate, and with great probability referred to the direct action of alcohol. In connection with this, it may be worth while to recall the fact that alcohol is actually excreted by the lungs, probably partly in an oxidized state, and may therefore have a directly-toxic action. Further, arsenic, if given in long courses, seems to have a tendency to produce bronchial catarrh; and cantharidine injected experimentally under the skin of rabbits, has produced acute laryngitis. *Post mortem* observations have shown nothing definite on this point.

With regard to the influence of alcohol on the production of tubercle, the utmost divergence, and, indeed, contradictory opposition, of opinion prevails. Huss found tubercular phthisis to be rare in drunkards, and that has been the general conclusion drawn from *post mortem* observations. It has even been thought that drinking freely checks the progress of phthisis, but of this I can find little evidence. On the other hand, the most general impression is that alcoholism is a frequent cause of consumption. On this disputed point, we must appeal to the methodized experience of those who have special opportunities of observation. The only new fact in the discussion is, I think, the undoubted frequency of tubercular disease in the subjects of alcoholic paralysis.

Passing over many important and interesting subjects, I will only say a word or two on the relation of chronic alcoholism to the skin. Most of us are familiar with the kind of skin generally associated with advanced alcoholism — soft, smooth, satiny, generally pale, and sometimes waxy-looking. It appears to depend partly upon accumulation of adipose

tissue under the skin, partly, perhaps, upon wasting of the skin itself, or of the epidermis. It is very much like the senile condition of skin. It is stated by Lancereaux to accompany fatty degeneration of the liver, or rather steatosis. I am sorry, however, to have no specimens of skin from alcoholic subjects. The association of chronic hyperæmia of the nose, or other parts of the face, and of acne rosacea, with drinking habits, is too well known to need mention, except the expression of a hint that the frequency of such association has been exaggerated. There is only one other skin affection, so far as I know, which has been definitely attributed to the effects of drinking. It is a peculiar brown pigmentation, mottled and variegated, which has been described as occurring in alcoholic persons. It is singular that we had one case at St. Thomas's Hospital, of a patient dying of cirrhosis of the liver, combined with tuberculosis, in whom a piebald mottled appearance is described as having been present on the genitals. It appeared, from the description, to have been like the so-called leucoderma, consisting of white patches in the midst of skin, showing excess of pigment; but it would be premature, I think, to conclude from a few coincidences that it was produced by alcoholism, since a similar condition certainly often arises, without any such cause.

Eczema, psoriasis, and various other diseases, have been ascribed, with little ground, to the effects of drinking. The only fact I believe to be established is that drinking habits make such diseases inveterate, and sometimes quite incurable. I have seen eczema, in an alcoholic subject, pass into general exfoliative dermatitis, on which treatment made absolutely no impression.

DEBATE ON MORBID ANATOMY AND PATHOLOGY OF CHRONIC ALCOHOLISM.

Dr. Dickinson showed a drawing of a liver with enormous increase of connective tissue. He insisted on the overgrowth of fibrous tissue, as the essential part of cirrhosis

of the liver, and of granular degeneration of the kidney. He had often seen what appeared to him to be irresistible evidence of this new growth in the cirrhotic liver, and granular kidney of childhood, where the new growth was very profuse, and highly nucleated. He had satisfied himself that new vessels were developed in this new tissue. Whatever might be the minute anatomy of cirrhosis of the liver, there could be no doubt as to the effect of alcohol in causing it. In the course of the circulation, alcohol reached the liver first, and the kidney only after distance and dilution. In a comparison between 149 persons, whose occupation made them conversant with drink — potmen, brewers, etc., — and the same number of persons not so conversant, cirrhosis of the liver presented itself in twenty-two of the traders in drink, in eight of the others. Thus the evidence as regards the liver was clear enough, and might be taken to imply also that the class regarded as the more intemperate were not suspected without reason. With regard to the kidney, there was no such evidence; the total of renal disease was not greater in the drink class than in the others, while granular degeneration in particular was only slightly increased — thirty-one against twenty-seven. A similar conclusion was reached by examining persons dead of delirium tremens, with whom renal disease was not more frequent than in persons taken by chance who had died from accident. The effect of alcohol on the kidney was not to be entirely ignored, but had been overrated. The fact appeared to be that the liver was acted on chiefly by alcohol, the kidney by a variety of causes, of which alcohol might be one, the others being heredity, climate, gout, lead, etc., upon which it would be foreign to the present purpose to dwell. A point of interest, as between the liver and kidney, was the fact that the two seldom became fibrotic together. Only one-seventh of persons with granular kidneys had cirrhotic livers, showing that the two diseases were probably due to different causes. Next, as to tubercle as a result of alcoholism; the observations already referred to, showed a greater frequency of

tubercle in every organ liable to it, in persons trading in drink as compared with others. In the lung, this amounted to a proportion of three to two; in other organs, the preponderance of tubercle with drink was still greater, so that no doubt could be entertained that drink promoted tubercle, instead of, as had been thought by some, preventing it. In conclusion, another point of view was proposed to the Society. Alcohol undoubtedly caused many diseases. Were there none, or no morbid conditions, which it tended to prevent? Good health was a medium state, neither too little nor too much of anything; not too much fat, or too little, the brain not acting to mania, or sluggish to melancholy; the heart not over-stimulated, or over-inhibited; the bowels regular, not too active; the urine sufficient, but not profuse, and so on. Thus, if alcohol caused a departure from health, in one direction, might it not prevent departure in an opposite direction? If alcohol prevented oxidation, it should be good where oxidation was in relative excess. In short, as alcohol produced some disorders, might it not prevent their contraries, if such there were? In the cases spoken of, drink appeared to retard adhesive and plastic processes, and replace them by suppurating ones. It was conceivable that this, though generally injurious, might in certain circumstances be beneficial. The facts indicated that endocarditis was less frequent in the drink traders than in others. Without pretending to speak otherwise than doubtfully on these points, they were suggested for the consideration of the Society.

Dr. Buzzard would not discuss the clinical aspects of alcoholic neuritis, which were now very generally recognized, except to draw attention to the fact that alongside of the complete immunity of the functions of the bladder and rectum, usually observed in these cases, there was in females an almost constant suppression of the catamenia, during the many months of illness usually involved. He had not seen any reference to this circumstance, which had forced itself upon his attention in numerous instances. Agreeing with

Dr. Payne, that the acceleration of the heart's action was probably due to lesion of the vagus, he suggested that the pneumonia which occasionally terminated cases of this kind might probably be due to a similar cause. Dr. Payne had referred to the two kinds of microscopical changes in the peripheral nerves, and had remarked that, although very generally the changes were found together, sometimes the signs of parenchymatous degeneration, at others those of interstitial inflammation predominated. Both, however, he had gone on to say, he believed to be produced by the direct action of alcohol. Dr. Buzzard could not acquiesce in this view. He pointed out that we had not to do here with universal, or even very widely spread, changes in the nerve fibres. As a rule, where death had given the opportunity of observation, it was found that the spinal cord, the roots of nerves, the plexuses, and the proximal portions of the nerve trunks to the extremities, were perfectly free from pathological changes, which were confined to a greater or less extent to the periphery of the nerves. This surely was not what might be expected, as a result of alcohol in the current of the blood, permeating equally all tissues of the body. Moreover, although, as Dr. Payne had justly remarked, the parenchymatous and interstitial changes usually went together, they did not always do so. The exceptions, indeed, pointed out by Strumpell and others were so striking that it had been seriously suggested by Erb that we had to do with two distinct diseases — a degenerative atrophy of peripheral nerve fibres, and an interstitial neuritis having no connection with the former. Were the action of alcohol direct, the exclusive affection of one structure was hardly conceivable, especially as the fatal issue showed that the cases in which this occurred were of severe, not slight character. Dr. Buzzard had long felt that notwithstanding the absence of observable lesion, there was probably some change in the cord which brought about the coincident and limited affection of the periphery of so many nerves, and some years ago (Harveian Lectures, 1885) he had suggested that it was upon vasomo-

tor centers in the bulb and cord, that the toxic action of the alcohol was primarily excited. It was of common observation that the commencement of alcoholic inebriation was flushing of the face, indicating that the cervical sympathetic was becoming paralyzed. This was a temporary and passing influence. One would conceive that the effect of repeated, and, so to speak, permanent toxic action of the same kind, would be to cause more or less enduring alteration in the calibre of minute arteries; those in which the muscular element was relatively most developed. These belonged to the periphery of the arterial system, and corresponded generally with the periphery of nerve fibres. It was conceivable that the supply of blood to the periphery of nerves might in this way be modified by an irritative influence excited by alcohol, or vasomotor centers in the bulb and cord, and according as certain sets of vasomotor or vasodilator fibres were affected, the tone of a vascular area would be changed in the direction of constriction or dilatation. Notable diminution of blood-supply, long continued, would occasion starvation and degeneration of the elements of nerve-fibre, while arterial dilatation would cause blood-stasis and inflammation. The limited œdema, so often observed in cases of alcoholic neuritis, bore concurrent testimony in favor of this view. Dr. Buzzard concluded by discussing the etymological meaning of the term "itis." Professor Kontos, the greatest living authority, had told him that it had a merely adjectival significance, that one must consider some such word as the Greek "nosos," "disease," understood. Neuritis would thus mean simply disease of the nerves; myelitis, disease of the cord, without specially signifying inflammation.

Dr. Pitt read an essay based on the *post mortem* records of Guy's Hospital, during the last twenty years, which seemed to show the following facts: That the greater number of cirrhotic livers were large livers, owing to the presence of fat; that death occurred in such cases at about the age of 46 years, whereas the owners of small cirrhotic livers lived about three years longer; that in hard drinkers, about 50 per

cent. had hypertrophied kidneys, but without showing morbid change, and that in only 25 per cent. had the kidneys undergone morbid change; that in as many as 22½ per cent. of those dying with cirrhosis, acute tuberculosis had been found *post mortem*, and that the younger the patient with cirrhosis was, the more liable was he to have tubercle as well; that three cases of acute yellow atrophy appeared to have been due to alcohol; and that he had also twice seen sections from cirrhotic livers which showed changes similar to those occurring in acute yellow atrophy; that cancer had once occurred in a cirrhotic liver. With reference to other diseases which seemed to have some relation to alcohol, there had been three cases of acute cerebral meningitis, one of suppurating meningitis, and three cases of pachymeningitis.

Dr. Finlay said that the appearances presented by the microscopic specimens which he was showing, bore out in detail much of what had been said by Dr. Payne as to the pathological changes found in certain parts of the nervous system in alcoholic paralysis. The specimens were furnished by two patients who died in the Middlesex Hospital, the one being a female, aged 28, the other a male, aged 51. They were typical cases of the disease, both as regarded history and symptoms. The specimens belonging to the first case, were a transverse section of the plantar nerve, in which were seen degenerative changes in most of the nerve fibres, with thickening of the perineurium, and general infiltration with leucocytes. He had depicted the appearances seen in drawings, which he exhibited to the Society. A longitudinal section of the same nerve showed enormous increase in the nuclei of the nerve sheaths, and infiltration with leucocytes. A section of one of the extensor muscles of the wrists showed a very remarkable appearance; the muscle fibres were wasted, and the interstitial spaces crowded with leucocytes and nuclei.

Appearances very similar in character were found in the second case. Sections of the cord were shown, and they were healthy, though he did not deny that degener-

ations there might occur. The pathological changes found in the nerves were as complete in cases in which the cord seemed perfectly healthy as in those in which changes had been reported. The fact of changes being found in the vagus was an interesting one; he had found it once, and so had Dr. Sharkey, and the great acceleration of pulse from seventy-two to one hundred and sixty in a few days brought the pathological changes into line with the symptoms in an instructive way; the same remark might be made as regarded the phrenic nerve. In the first he examined, he found no change, notwithstanding that the diaphragm was paralyzed, but that was probably because he did not take the section of the nerve near enough to the muscle. In a later case, he found well-marked change near the diaphragm. In reference to the question of the order of the changes in different parts of a nerve, he would submit whether, on the whole, the probability was not in favor of the parenchymatous change being first, and the inflammation of the perineurium secondary. He thought this from the fact that of the cases which he had observed, the one of longest standing was the only one which showed marked inflammatory appearances in the surroundings of the nerve, and in the muscles. The degenerative appearance in the parenchyma of the nerves was equally marked in all.

One of the most interesting points in connection with alcoholic paralysis, was its association with tubercular disease. He thought this a causal connection, and he believed the excess in alcoholic indulgence led to both. It was quite true that persons suffering from phthisis, or having a tendency to the disease, might be benefited by a certain amount of alcohol, but this was the regulated use of alcohol, and was a very different thing from the Bacchanalian bouts of drinking, indulged in by the patients whose organs were now being discussed. Besides, this latter kind of drinking might be the cause of other lapses from morality, and hygienic conditions of life, which might reduce vital power, and determine the access of phthisis, especially in persons predisposed to the disease.

In conclusion, he said he had been brought into contact with five cases of alcoholic paralysis of great severity, and of these four had died and one had recovered. Of the fatal cases, two had phthisis and two had not. The liver was fatty and cirrhotic in all, and the nerve roots unaffected. Of course, it was impossible to generalize from a small number of cases, but the aggregate of experience brought forward would help towards some valuable generalizations, and could not fail to be useful to future workers in the investigation of the pathological changes procured by alcohol on the nervous system.

Dr. Savage said: I approach this subject with some diffidence when addressing the Pathological Society, as my experience is chiefly clinical, yet, I presume that there is a pathology beyond mere rags and tatters of humanity, and I shall address myself, in the few words which I have to say, to the more general side of the pathological effects of alcohol on the nervous centers, more especially on the higher or mental centers. During the past seventeen years, out of 4,000 patients admitted into Bethlem, of whom I have records, only 133 have given drink as the cause of their insanity. This is a very small proportion, and is not to be considered as at all representing the proportion of insanity produced by excess of stimulants; but in Bethlem, the patients being specially selected from the more deserving classes, many drunkards are thus excluded. The cases admitted provided good examples of the various nervous disorders produced by alcoholic poisoning, both acute and chronic. I was surprised to find that, of these 133, less than one-fifth had any insane relations, so that the persons so affected did not come from the nervously unstable. Thus drink produced insanity in many who were otherwise fairly stable. Drink, on the other hand, can be shown to be the starting-point of neuroses in the individual, and also in the family. Again, of those becoming insane as the result of alcohol, only a very small proportion were suffering from general paralysis.

To return more in detail to the subject of Dr. Payne's paper, I agree with his divisions, and I have for years been in

the habit of teaching that there may first of all be simple disorder of function, next malnutrition, and lastly there may be disease or degeneration of the tissues, and with each of these stages, special symptoms are to be met with. First, then, alcohol may produce confusion of ideas, gradually becoming delirium; these states of confusion or delirium may by repetition become more or less habitual, or may lead to still greater nervous instability, which is recognized as mania, or partial weakness of mind; in these cases the delirious aspect may be retained from the first, and remain for weeks or months. If such cases die, little or nothing is found to account for the mental state, beyond changes in the brain-cells, which are similar to those met with in old age, or in states of exhaustion, such as seen after typhoid fever.

In the next group of cases, we have to recognize alteration in the general nutrition which is more lasting in its effects, and also more widespread in its evidences. In some, the milder cases, the alcohol seems to loosen the nervous fibre so that the more human, moral, and social relationships are disregarded, and there is emotional instability, loss of memory, want of energy, will power, and lack of judgment, so that domestic troubles frequently result, leading to further distress of mind and body, and sleep, the brain-food, is wanting or unrefreshing.

In another group of cases falling, I believe, under this heading of malnutrition (with, or frequently without, any of the social disorders) are the patients who are annoyed by sensory troubles of one kind or another; thus, there may be uneasy skin sensations, giving rise to ideas that electricity is being used to injure or annoy the patient, or that some unknown "influence" is exerted from without by some evil-minded persons for their own objects. Hallucinations of smell may lead to ideas of poisoning, and visions of insects or of devils may give rise to other fancies of persecution; while hallucinations of hearing may start the thought that there are watchers about, anxious to injure or annoy. From one or more of these being present, a whole fabric of delu-

sions may arise, generally anti-social and dangerous. It may happen that these or similar symptoms may be quite acute in their onset, and may pass off rapidly, pointing to their production by an ephemeral cause in these cases. I fancy the changes in the tissues are more marked than in group one, though I have never had the opportunity of examining any such case in its earlier stages.

There may be other evidences of malnutrition depending on disease of some of the nerves. I am inclined to think that a fairly large group of persons suffering from hallucinational and delusional insanity owe this in great part to peripheral neuritis of alcoholic origin. I could, did time permit, give very good clinical examples. Such changes in nutrition lead very gradually into those in which there is distinct tissue-waste and disease, and I would first state that wasting seems to me to be the chief characteristic of these cases. I do not know of any stage of hypertrophy preceding the wasting; but this may occur in cases in their earlier stages. In these cases, there is progressive loss of power of one or all the faculties, and with it general wasting of the brain, so that the convolutions appear to be numerous, and are separate and distinct, narrow at their edges, the calvaria often marked by Pacchionian bodies, the dura mater often rather thick and adherent, the arachnoid with thickened milky spots, excess of fluid, at times hæmatomata, and I have several times met with a clear filmy membrane lining the middle fossa at the base of the brain, evidently allied to the above membranes. It is interesting to note that pachymeningitic membranes are proved now to depend on wasting, and not on inflammation, and they occur under these conditions in general paralysis and in alcoholic dementia. It is well to remember that towards the end of life an acute inflammatory process, associated with maniacal excitement, may come on, and rapidly kill the patient.

Having briefly considered, and in no novel way, I fear, the pathology of general insanity and alcoholic excess, I must pass to the most important and most debated ques-

tion as to the relationship between alcoholic excess, and the production of general paralysis. Many authors consider that it is the chief cause; and Dr. Mickle, from his experience, which is chiefly drawn from old soldiers, takes it to be the great exciting cause. Dr. Maudsley does not speak so definitely, but believes it to be associated with the disease, and most writers, English and foreign, trace a connection between intemperance, and the increase in this disease which has been so marked of late. I rather agree with Dr. Payne that strain, that is, wear and tear under conditions in which repair cannot be effected, is the real cause of general paralysis, and that drink may in some cases directly, and in more indirectly, have a causative effect. General paralysis is a disease of those who lead active lives; it is more common in races who eat meat and take stimulants, such as alcohol; it occurs in city dwellers, whether working with the highest, or only the ordinary mental faculties.

I find that of the last 103 general paralytics admitted under me at Bethlem, only seven had distinct histories of alcoholic excesses, before the onset of the disease. These numbers are smaller than I expected, and at first sight are puzzling, as we shall see in a minute. The symptoms of drunkenness have been compared to those of an attack of insanity; but I would rather, with Wilks, say that in early alcoholism, you see all the possible symptoms met with in early general paralysis. The same functions are disordered in the same way, and yet the functional disorder does not so frequently lead to organic change along the same lines as one would have expected. The reason seems to be that alcohol is very unstable and easily got rid of, so that the highly vascular organ, the brain, has a power of self-repair which is astonishing. It is seen that with more stable causes of disorder, similarly happy results do not follow. Thus lead poisoning is not uncommon as a cause of general paralysis, and local syphilitic lesions are still more potent in leading to permanent degeneration.

It is interesting to me that not only are the mental symptoms met with in alcoholism and general paralysis parallel,

but there are further bodily likenesses. Thus, there is a group of general paralytics who have a very beery aspect, while another group have all the looks of the spirit drinker, even to the capillary stasis about the face. To sum up this part, then, I would say that though alcoholic excess is common in general paralysis, and may be in some cases the predisposing, in others, and larger numbers, the exciting cause of the mental symptoms first noticed in general paralysis, yet I do not find that more than 7 per cent. depend on alcohol alone as a cause. Neurosis in the parents may appear as intemperance in the children, but drink in the parent very often appears as one of the forms of mental weakness or instability in the offspring. Thus idiocy and moral defect and tendency to break down at critical periods of life, are noticeable in the children of parents who have been given to alcoholic excess. I have no time now to discuss the relative frequency with which the various signs of mental disorder occur in alcoholic insanity, but I must say that poisonings, persecutions, tabetic weakness, and local or general nerve pains, and false interpretation of these, are specially common, and that the changes vary from slight malnutrition to wasting, allied to senile decay.

Dr. Sharkey: Dr. Payne, in his introduction to this debate, raised the difficult question — Is the poisonous action of alcohol first exerted upon the specialized, parenchymatous tissues of the organs, or upon the connective tissue which forms their frame-work, or upon both concurrently? If this question be taken as referring only to such anatomical alterations as we can appreciate by means of the microscope, I think it can be shown that, in the case of the liver, at any rate, the poison acts upon the portal vein, and upon the connective tissue which surrounds it, in the first instance, and that the liver-cells in its immediate neighborhood may for a long time remain healthy. I have tried to demonstrate this by means of two sections, the first showing the dilatation of the portal vessels, and development of young connective tissue in the early stage of cirrhosis, and the second showing healthy liver-cells lying alongside enormous strands of firm connective tissue in the advanced stage of the disease. In

other organs, the spinal cord for instance, I have seen the vascular and parenchymatous changes side by side. But it is very probable that, owing to inheritance and acquired peculiarities, individuals may differ in this respect, and that one person's connective tissue and vessels may fall a more easy prey to the destructive action of alcohol than those of another, while in others the parenchymatous elements may be the more vulnerable; but it is an undoubted fact that death of the liver-cells may occur even over very wide areas in cirrhosis.

It seems to me, however, to be very uncertain what the deadly agent is in such cases, for this necrosis may certainly take place after patients have remained for long periods in hospital without drinking any alcohol. May not some other poison, either organic or inorganic, have gained access to and killed the cells? I show a specimen to-night where many colonies of micrococci are to be seen among the necrotic cells, and in the connective tissue strands, in order to draw attention to this point, and to suggest further investigation of such cases. Observers still differ as to the effects of alcohol on the kidney, some holding that it is not a frequent cause of disease. My experience in the *post mortem* room, for the last ten or twelve years, has left me strongly imbued with the opinion that it is a potent factor in the production of chronic renal disease, though its injurious effects are far more frequently exemplified in cirrhosis of the liver.

With regard to the action of alcohol on the nervous system, it seems probable, from the observations hitherto published, that it falls most intensely upon peripheral nerves and muscles, and much less, though to a certain extent, upon the central nervous system. Of course, I am speaking of the palpable anatomical alterations, for the functional disturbances of centers which leave no trace behind, are often very severe. So widespread may be the effects of alcohol on nerves that it is a question whether any nerve is beyond its reach. In the last volume of our *Transactions*, I reported a case in which, in addition to the nerves and muscles of the limbs, the phrenic and pneumogastric nerves, together with the muscles they supply, were affected. But it is probable

that even nerves of special sense may not escape. Some authorities suppose that certain cases of tobacco amblyopia, so called, are really cases of alcoholic amblyopia, though I am not aware that any indubitable case of this axial change of the optic nerve in alcoholism has been published. I must here mention a case which came under my care, of what I believe to be alcoholic retinitis. I need not narrate the case, for Dr. Ord has published it in the *Lancet* for February 11, 1888. Suffice it to say that it was the most severe case of alcoholic paralysis which I have seen recover. Though at one period of her illness, she had a trace of albumen, it became quite clear before she left St. Thomas's Hospital—where she remained for sixteen months—that she had no chronic renal disease. Dr. Ord remarks, in his account of the case (for she was under his care during the greater part of her illness): "The question arises whether the retinal changes were due to renal mischief, or were possibly due to a peripheral neuritis of alcoholic origin." Dr. Ord had not then seen the note which Mr. Nettleship was good enough to make for me just before the patient left the hospital. It is as follows: "Much better in health; says vision is quite good. Ophthalmoscopic examination of right eye (atropized) shows two kinds of changes: (a) Scattered, usually oval, dirty white spots in neighborhood of optic disc, more above than below; all are beneath vessels; pigment around them is rather intensified, but there is no definite collection; surface of some of them is a little granular or glistening; their exact nature cannot be decided by the ophthalmoscope, but they might be deposits between retina and choroid. (b) Ordinary bright, white (frosted silver) confluent dots, grouped chiefly along large vessels above and below yellow spot, but scattered in other parts, optic disc of healthy color and transparency; vessels normal; retina round disc slightly thickened and filmy (parallactic movements); none of the pigment spots so commonly seen after renal retinitis, except one at the periphery. Though the silver white spots (b) are usually near to large vessels, they are never in front of them, nor

are they arranged about yellow spots at all, as is usual in renal cases. Left eye, similar changes, but less abundant. If seen now for the first time, the changes would hardly suggest albuminuric retinitis, nor do they agree with any common type." Dr. Mott reported, at the last meeting of the Society, a case of fatty degeneration of the heart, and sudden death in a drunkard. As I have demonstrated that inflammation of the pneumogastric, and of the heart's muscle occurs in alcoholism, I would suggest that the cardiac degeneration may be the result of alcoholic neuritis, just as the muscles of the limbs degenerate, as a consequence of disease of their nerves. Phthisis is frequent in cases of alcoholic poisoning, and, as Dr. Payne said, it is almost the rule in alcoholic paralysis. Two factors are required to produce phthisis: first, the bacillus tuberculosis; and, secondly, a soil rendered suitable by lowered vitality and nutrition. May the second factor be supplied in alcoholic paralysis cases by the inflammation of branches of the vagus or other nerve going to the lung? This would only be another instance of the effect of nerves on nutrition. I might touch on other points, but I have already appropriated far more than my share of the time allotted to this discussion.

Specimens illustrative of the Effects of Alcohol, shown by Dr. Finlay: 1. Transverse section of plantar nerve showing degenerative and inflammatory changes. 2. Longitudinal sections of plantar nerve, showing increase of nuclei and infiltration with leucocytes. 3. Longitudinal section of phrenic nerve where it is passing into the substance of the diaphragm, showing exactly similar changes to those seen in the nerves of the extremities. 4. Longitudinal section of phrenic nerve, higher up, showing degeneration of nerve-fibres, with segmentation of the myelin. 5. Transverse section of extensor carpi radialis longior muscle, showing increase of nuclei of sarcolemma, and infiltration with leucocytes. 6. Section of spinal cord in lumbar region from a case of alcoholic neuritis, showing absolutely no abnormal changes. 7. Longitudinal section of musculo-spiral nerve,

with well-marked segmentation of myelin. 8. Longitudinal section of phrenic nerve, with slightly similar changes.— Dr. Hadden: Section of muscle, showing round-celled interstitial growth. Teased preparation of anterior tibial nerve, showing the nerve-fibres in various stages of degeneration.— Dr. Ormerod: Longitudinal section of nerve (osmic acid preparation), showing breaking up of the myelin. Series of sections of spinal cord showing no changes. Section of muscle showing increase of nuclei. Transverse section of nerve showing interstitial thickening of endoneurium.— Dr. Pitt: 1. Hypertrophic cirrhosis of liver, showing similar changes to acute yellow atrophy. 2. Section of peripheral nerve, showing interstitial inflammatory changes.— Dr. Sharkey: Sections of liver. 1. Showing early dilatation of portal vein. 2. Advanced cirrhosis, showing healthy liver cells alongside thick strands of connective tissue. 3. Puckered capsule in advanced cirrhosis. 4. Section of kidney from a case of severe alcoholism, showing extreme congestion. 5. Section of popliteal nerve, with marked inflammatory changes. 6. Section of phrenic nerve as it enters the diaphragm, showing similar changes.— Mr. D'Arcy Power: Cast of right leg from a case of alcoholic neuritis.

Specimens.— Drawings of microscopical sections by Dr. Finlay and Dr. Sharkey. Drawing of liver by Dr. Dickinson.

Three centuries ago Queen Elizabeth, of England, ordered a census of all the inns, taverns, and alehouses in her realm to be made. The object was to tax them for government revenue, but for some reason this was not done until two centuries later. The result of this canvass indicated 16,364 places for the sale of spirits and beer. The population of the realm at that time was probably about five millions, and this would give one drinking place for every two hundred and forty persons. In the census of 1887 there were 98,176 drink-shops, or about one drinking-place for every two hundred and fifty people.

PATHOLOGICAL CHANGES IN CHRONIC ALCOHOLISM.*

By LEWIS D. MASON, M.D.,

Consulting Physician to the Inebriate Asylum, Fort Hamilton, L. I.

If we consider the serum of the blood in the habitual drunkard as an alcoholized fluid, and that alcohol existing in a certain percentage in the serum acts not only upon the serum of the blood but also upon its anatomical elements, we have a condition that modifies nutrition, producing metamorphosis and degeneration of tissue. If, in connection with this, we add the fact that alcohol, *per se*, is an irritant, producing modification as well as degeneration of tissue independent of blood changes, we have an additional reason to regard alcohol as a disease-producing agent.

We have then to study the pathological effects produced by alcohol on the blood from two standpoints:

First. — As to its effect on the blood itself.

Second. — The direct effect of the alcohol in the alcoholized blood or serum upon the tissues of the body.

It would be of interest to determine to what extent the serum of the blood can take up alcohol. That it does so, in common with the other fluids of the body, there can be no doubt. Blood taken from an habitual drunkard, and exposed to heat, will give off the fumes of alcohol. At autopsies on drunkards, the fluid in the ventricles of the brain has been ignited with a match.

There is good reason to warrant the conclusion that not only the serum of the blood, but also the fluid of the ventricles and the cerebro-spinal fluid, in the case of habitual drunkards, contain alcohol to a greater or less extent, in some

* Read before the American Association for Study and Cure of Inebriety, at its regular meeting, December 4, 1888.

cases probably as much as is compatible with life. A series of chemical analyses, to determine the average percentage of alcohol in the blood of habitual drunkards, would be of extreme interest. The blood in such a condition has not only its nutritive properties very much impaired and its oxygenation and circulation retarded, but as a builder up of tissue it must be very inferior to normal blood; in fact, it is a disintegrator of tissue. The urine of the habitual drunkard contains a certain percentage of alcohol. The application of heat or the proper chemical tests for alcohol, if applied, prove this. Indeed, if we test the urine of an abstainer within a reasonable time after he has taken alcohol, the chromic acid test will show the characteristic reaction. The effort to prove that the milk of nursing mothers, using beer or other alcoholic beverages, did not contain alcohol, has resulted in failure. The toxic effect on the infant is shown in the moderate alcohol coma it experiences after nursing, and where the mother was intoxicated the convulsions that ensued.

The experiments of M. Lallemand, Duroy, and Perrin seemed to demonstrate that alcohol received into the body was eliminated by the lungs, the kidneys, and the skin, completely and as alcohol, and that if it was retained in the tissues it was not transformed.* The experiments of Anstie on the other hand disprove this. "While a certain proportion of the alcohol ingested is excreted by the lungs, kidneys, and skin, a certain proportion is broken up in the blood and transformed into some other substance, probably aldehyde," just as aldehyde shortly after its administration is transformed in the blood into acetic acid. But this does not weaken the practical fact that alcohol is present in all the fluids of the body, passes through all the excretory organs, acts directly upon the nervous system and other tissues of the body, producing its deleterious effects either as alcohol or some transformation of it equally pernicious. The degeneration and alteration of tissue in chronic alcoholism is due to the following causes :

* "Stimulants and Narcotics." Anstie.

First. An impoverished, alcoholized blood, imperfect in its oxygenation and retarded in its circulation, and, consequently, producing mal-nutrition.

Second. The direct irritating effects of alcohol contained in said blood.

Third. The degenerating effects of alcohol on the nervous centers, producing vaso-motor paralysis and impaired reflex action.

The latter is regarded by some writers as the primal and most potent cause of general alcoholic degeneration. The principal tissue changes in chronic alcoholism are fatty, fibroid, and atrophic.

The most marked examples of alcoholic fibrosis are found in the lungs, kidney, and liver.

In the lungs, as alcoholic phthisis, a chronic interstitial pneumonia; in the liver is cirrlosed, gin, or hobnail liver; in the kidney as cirrhotic, hard, or contracted kidney. These fibroid changes are slow, may take years to form, but they are rapid in the latter stage. In syphilis we may resolve a gumma or modify the lesions of the tertiary stage. In pulmonary tuberculosis we may be fortunate enough to secure cicatrization of cavities, or hold the disease in check; but the lesions of chronic alcoholism are progressive, and, when once fully established, irremediable, whether in the lungs, kidney, or liver.

The effect of chronic alcoholism on the generative functions in both sexes is instructive and interesting.

"Lippich* has demonstrated that alcoholized marriages produce two-thirds less children than among those who were temperate. There can be no doubt that alcoholism affects the generative function of both sexes. The testicles undergo degeneration in alcoholized persons. The spermatic fluid shows this in the well marked changes it exhibits, robbing it of the vitality indispensable to conception."

"The alcoholic cachexia, after it has attained sufficient in-

*"Alcoholic Heredity." Dr. F. Lentz, Med. Director of Insane Asylums, Tournai, Belgium.

tensity, will produce this, although the organs themselves may not be diseased. Many examples of women are noted who have had children by their first marriage whose subsequent union was barren with an alcoholized husband, and also the reverse. Women may become sterile by alterations of the ovaries and matrix, and abort before maternity. From this point of view alcoholism is a more serious trouble in the mother than in the father."

Drs. Mairet and Combernal recently presented some experiments on the hereditary influence of alcohol before the Academy of Sciences of Paris.

A healthy bitch was made a chronic alcoholic, and gave birth to twelve puppies; two were still-born, three died by accident, and the remaining seven died of epileptic attacks, enteritis, pulmonary and peritoneal tuberculosis. The lesions found at the post-mortems were thickening of the bones, fatty degeneration of the liver, adhesion of the dura mater, and other marked alcoholic changes.

A strong bitch was kept intoxicated on absinthe the last three weeks of gestation. Six puppies were born; three died at birth; two were of defective intelligence; one grew up, but was defective in intelligence and nervous organization. This one was coupled with a healthy dog; of this union three puppies were born; one died of marasmus. The other two were congenitally defective, having atrophy of hind legs. One of the conclusions drawn was that the degeneration from alcohol was more prominent in the second generation than the first; also that alcohol used by the mother always produced defective offspring.

A point of interest in this connection is the etiology of dipsomania. The best authorities now agree that, while exceptionally dipsomania may arise from traumatism or alcoholism, the great majority of cases are traced to an insane or intemperate parent or parents. It is a hereditary, not an acquired neurosis.

It will be of interest to record further the results of chronic alcoholism in the lower animals, produced by experimenters

with the view of determining the pathological lesions of alcohol. And none have been more zealous than the French in this direction; and of these investigators none more prominent or painstaking than M. Magnan. We will quote therefore extensively from his work on "Alcoholism," † a most valuable and classical work, and the best in my experience on this special subject.

"M. Tardieu has found meningeal hæmorrhages in persons dying in a state of intoxication. These are less frequent in animals, and this is the reason why pachymeningitis due to the prolonged action of alcohol is rarer in animals than in man."

Magnan. — "That in dogs, even at the end of two months of alcoholic poisoning, the liver undergoes fatty degeneration. A microscopic section shows the cells have lost form, are swollen, round, infiltrated with granules and drops of fat."

M. Pupier notes the effect on a fowl to which absinthe had been given as a drink ten months. "The liver is hard, resistant, lessened in volume, has irregularities on its two surfaces, numerous whitish depressions, the intermediate parts of a reddish brown color. The microscope shows dilatation of vessels at periphery of lobules, filled with granules; extreme compression and degeneration of hepatic cells."

In another experiment a fowl was subjected to the action of red wine for ten months. "The liver is of a clear yellow color, soft, pasty, and oils the blade of the scalpel. Microscope shows cells enlarged and rounder than normal, filled with granules resembling those in parenchymatous inflammation at its beginning; here and there large fat drops."

A fowl was given white wine under similar conditions. "The liver is of good color, but is shriveled on its lower surface and borders. Microscope shows dilatation of vessels, which appear three or four times the normal size when compared with the cells which have undergone atrophic degeneration. A rabbit was subjected to alcohol. The liver shows

† "On Alcoholism and the Various Forms of Alcoholic Delirium, and their Treatment." Dr. V. Magnan, Physician to St. Anne Asylum, Paris; Laureate of the Institute, etc.

nothing as regards capillary net-work ; the cells are altered and contain two or three nuclei ; around bile ducts there is an increase of connective-tissue nuclei. M. Pupier concludes that absinthe affects primarily the stroma without producing new connective tissue or sclerosis of walls of vessels. This marked new growth has not been confirmed. As for red and white wine and alcohol, their injurious effect is seen rather in the plasma and hepatic parenchyma."

Alcohol would seem to produce hepatic steatosis, but not to the exclusion of sclerosis.

A prolonged period of alcoholic intoxication, and consequent irritation, might provoke sclerosis. In the same animal, with fatty degeneration of liver, are found irritative lesions, such as pachymeningitis, sclerosis of posterior columns of spinal cord, thickening and opacity of arachnoid and pia mater, milky patches in pericardium — all these at the same time.

"The kidneys, like the liver, undergo beginning fatty degeneration. The surface is smooth and even ; the cortical substance and prolongation between the pyramids of Malpighi show a well-marked yellowish tint, with small striations of a deeper color. The microscope shows tubuli, slightly swollen, cloudy, filled with granular and fatty epithelium."

M. Ruge mentions adhesion of capsule to renal substance in four cases ; in three cases fatty degeneration of the heart. Magnan has seen traces of pericarditis : "The coats of the stomach in dogs who take alcohol mixed with food are not sensibly thickened ; but the mucous membrane is injected rarely ulcerated."

When alcohol is taken without food, and directly injected by œsophageal tube or by fistula, traces of violent gastritis are seen ; in one case the stomach was shriveled and thickened, and the surface of the reddish-brown mucous membrane was lined with a layer of thick, sticky, glairy mucus streaked with blood. On cleansing with a stream of water, small ulcerations with irregular borders were seen ; in some places cicatrices appeared as irregular grayish plates. In the

mucus were found infiltrations of blood, some in layers, others in small spots. In the same dog, the cord is not injected and appears normal; a grayish tint is seen on the posterior columns, more marked on lower third, where it has the form of a triangle with the base directed backwards on each side of the posterior median fissure; in the same locality a slight grayish tint in the anterior columns on each side of commissure; Magnan has noted the same condition in a man where chronic alcoholism terminated in general paralysis.

Kremiansky, in dogs who were given alcohol four weeks, noticed pachymeningitis.

M. Neumann observed the same fact, but also that it did not exist sometimes in a more prolonged use of alcohol. Magnan found slight infiltration and slight thickening of arachnoid and pia mater, but no false membranes of dura mater. Others, slight dilatation of vessels of dura or simple injection or œdema of pia.

This diversity is explained by Magnan as due in some cases to a meningeal hæmorrhage during drunkenness, a hæmorrhagic pachymeningitis; but while this accounts for the existence of new membranes in some dogs, Magnan asserts "that pachymeningitis may come on without pre-existing hæmorrhage in certain nervous affections and chronic alcoholism."

We will close this testimony with the result on a terrier dog; two months old; vigorous; weighing thirteen pounds. On alcoholized diet, more or less continuous for nearly six months, an occasional rest being given.

Autopsy.—Cerebral dura mater slightly injected. No false membranes. Arachnoid and pia œdematous at base. Rosy tint over interpeduncular space. Membranes separate easily everywhere. Section of hemispheres show fine stippling. No distinct hæmorrhage. Surface of ventricles injected. Abundant vascular ramification on upper surfaces of optic thalamus and corpus striatum, the ependyma being slightly thickened. On section, no deep lesions.

Spinal dura, nominal; arachnoid and pia injected, espe-

cially lower part of dorsal region. Sections of cord show marked injection of gray matter. No gelatinous tint in columns. No microscopic change.

Lungs. — Large marblings of a pale rose or black red, as in broncho-pneumonia. Carnification of deep red portion; incompressible; noncrepitant, sinks in water. Right lung, at base, shows grayish points; bronchi opened showed viscid mucus mixed with blood.

Heart. — Right cavities distended with liquid blood mixed with black clots. Left cavities, no change.

Visceral Pericardium has opaline tint, milky over coronary arteries, particularly at base.

Liver. — Yellowish; deep colored points, which microscope shows are seat of well-marked fatty degeneration.

Kidneys. — Yellowish in cortical substance and between pyramids.

Spleen. — Normal.

Stomach. — Several small clots.

Mucous Membrane. — Viscid, very thick, adherent mucus. Membrane does not show any ulcerations."

We have thus quoted extensively from these French experimenters that others may be encouraged to follow similar researches with regard to the "pathological effects of alcohol" in animals, with the advantage of improved pathological knowledge and modern appliances; for these investigations demonstrate not only that researches as to the effects of alcohol can be satisfactorily conducted in the lower animals, but they also corroborate what has been demonstrated to be the effects of chronic alcoholism on procreation in the human species, as well as its other pathological effects.

Alcohol acts not only indirectly through the blood as an irritant, provoking fibrosis or other tissue changes, "but on the alimentary canal, particularly the stomach. The local effects of habitual doses of concentrated alcohol are seen in the permanent congestion of the blood vessels, exaggerated or vitiated secretions from the gastric glands, and ultimately a degenerative change in the structure of the submucous.

tissues, which consists in the disappearance of characteristic secreting structures and hypertrophic exaggeration of fibrous tissues." *

The effect of alcohol upon muscular or other tissue, producing fatty degeneration, is similar in this respect to the action of phosphorus, arsenic, or other poisons. Fatty degenerations of the pancreas from alcoholism shows † "the glandular parenchyma has partially or entirely disappeared; it may be replaced by adipose tissue, which is developed in the fibrous stroma of the organ around its vessels and glandular ducts." In some instances the acini or characteristic gland structure is lost entirely and replaced with fatty tissue.

But the most marked evidence of the deteriorating effects of alcohol is seen in its action on the nervous system. "It is clear that the nervous centers, independently of the ill effects on their nutrition of the blood changes, have a certain chemical attraction for alcohol, which accordingly is found in their tissue.

The characteristic changes which have been observed in the brain, medulla oblongata, etc., of confirmed drinkers, consists essentially of a peculiar atrophic modification by which the true elements of nervous tissue are partially removed; the total mass of nervous matter wastes, serous fluid is effused into the ventricles and the arachnoid, while simultaneously there is a marked development of fibrous tissue, granular fat, and other elements which belong to a low order of vitalized products." ‡

From these conditions arise vaso-motor paralysis, with all the results that follow a defective supply of blood and an impaired circulation, tending to local stasis. Moreover, if we exclude traumatism, there is not any disease of the nervous system resulting from other causes than alcoholism, at least with few exceptions, that alcohol cannot produce — alcoholic

* It must be noted that the autopsies in cases of chronic alcoholism in man represent a *longer duration* of the action of alcohol than in animals.

† "Cornil and Ranvier." Path. Hist. Shakespeare.

‡ "Chronic Alcoholism." Anstie.

neuritis, alcoholic anæsthesia, general paralysis, serous apoplexy, etc., and those cerebral conditions from which arise the acute and chronic forms of mental derangement. The nerves of special sense are not exempt. "The abuse of alcoholic stimulants has been said to be the cause of amaurosis, and, as a proof of this, the fact has been adduced that the affection has been arrested, or even cured, by completely giving up the habit of drinking" (Sichel). "This much is certain, that amblyopia occurs in great misproportion among habitual drinkers. It is generally first seen as night-blindness, but soon becomes constant, and gray atrophy of the nerve is recognized by the ophthalmoscope" (Pagenstecher).

"One point of interest in this connection, relating to the action of alcohol on the nervous system, is the theory advanced by writers on this subject, and it is a very plausible one: that the degeneration of all tissue in cases of alcoholism is due primarily to the action of alcohol on the nervous centers, and through these, by vaso-motor disturbance or impaired reflex action, upon the organs or tissues which these nerve centers, or vessels influenced by them, supply." But it would seem, while regarding this as the prime cause of alcoholic degeneration, we could not ignore the fact that the blood itself was a chronic alcoholism much deteriorated as to its quality and retarded as to its circulation, and, moreover, that it contained a chemical irritant. The limits of this paper will not permit us to consider in detail all the pathological changes due to alcohol. It affects all the tissues of the body; even the bones are not exempt.

We have therefore generalized our statements and taken a view over the whole field, rather than endeavored to carry out and elaborate any special line of thought. Our object has been to demonstrate that there is abundant material for the pathologist and the microscopist to investigate, and a neglected but nevertheless a rich field for medical research. How little progress has been made in the study of the pathology of chronic alcoholism and the diseases incident to alcoholism. The lens of the microscopist has been focussed

on the microbes of tuberculosis, charbon, anthrax, cholera, and leprosy; cultures of various bacteria have been developed, and the diseases themselves reproduced in the inferior animals from culture inoculations. The whole scientific world stands in daily expectation of new discoveries. Antisepsis, based on bacteriology, has revolutionized medicine and surgery, and has rendered the apparently impossible not only possible but an absolute certainty.

Alcohol has not any microbe, but the grand total of its mortality will exceed the combined effect of all the bacteria that have ever passed the microscopic field or developed in the culture tube of the bacteriologist; and yet, while in all other diseases pathological research, both gross and microscopic, seems almost to have exhausted itself, where is there an authentic work upon the "Pathological Changes of Chronic Alcoholism" in the English or Continental languages that we can resort to for information? It is hoped that the directors of laboratories will turn their appliances for pathological research in this direction also, and that the result will be an American work on "The Pathological Changes of Chronic Alcoholism," and that the whole study of the action of alcohol on the blood and tissues of the body as a disease-producing agent will be not fragmentary as in the past, but placed on a substantial basis. In 1887, Dr. H. F. Formad, at a stated meeting of the "Philadelphia Pathological Society," presented "an analysis of two hundred and fifty autopsies on drunkards, illustrating the most prominent anatomical lesions of chronic alcoholism." A most notable international congress was held in London, July, 1887. Prominent delegates from the scientific centers of every nationality were present. It was a purely medical congress, and the papers presented were on medical topics bearing directly on the subject—alcoholism. In the same year there was a similar gathering at Zurich, Switzerland. At the present time "The London Pathological Society" are debating the relation of alcohol to disease. Pathological specimens will be presented and a discussion follow. Nor are the

medical organizations of other countries inactive, or the foreign and American medical journals indifferent on the relation of alcohol to disease. There seems to be a general interest throughout the medical centers of the civilized world on this subject.

In view of all this and with the object of exciting further interest in this important subject in the United States, the "American Association for the Study and Cure of Inebriety" have offered an award for the best essay on "The Pathological Changes of Chronic Alcoholism Capable of Microscopic Demonstration."

The pages of the *Journal of Inebriety*, the organ of the Society, will always be open to papers, reports of cases, or discussions bearing on this subject and kindred medical topics.

Let us hope that the ensuing year will open as auspiciously as the one that is now passing away, and the records of medicine at its close will show much valuable information gathered in this hitherto neglected field.

The following curious facts occurred in the practice of a Newark physician: He attended the birth of a child whose mother had used morphia for years to excess. The child was born in a state of collapse, and seemed at the point of death, when the nurse gave it by mistake a teaspoonful of a solution of morphia, intended for the mother. Instantly the child revived and for several hours was vigorous. When it began to collapse, morphia was given and it revived again. This occurred every four or five hours until the third day, when it died. A sixth of a grain was given on each occasion, with the effect of rousing it up and restoring the circulation and heart's action. When these effects wore away rapid prostration and general asphyxia followed. This supports Erlenmeyer's statements, that children born of morphine mothers should have morphia the first few days of life to prevent collapse and exhaustion.

SEMI-ANNUAL MEETING OF THE AMERICAN
ASSOCIATION FOR THE STUDY AND
CURE OF INEBRIETY.

The semi-annual meeting was held in the parlors of Dr. Shepard's Turkish Bath Hotel, Brooklyn, N. Y., December 4, 1888. Dr. L. D. Mason, vice-president, occupied the chair. In his opening remarks the chairman suggested that this association should incorporate the word "study" in the title of the society, which better described its object than the word "cure."

Dr. Shepard offered a resolution that the word study be placed before the word cure in the title, so as to read The Association for the "study" and "cure" of Inebriety. This was carried.

The secretary announced that Dr. L. D. Mason, of Brooklyn, N. Y., had offered a prize of one hundred dollars for the best essay on the microscopical appearance of the brain in inebriety, under the auspices of this society, and offered the following resolution:

Resolved, That this society tender a vote of sincere thanks to Dr. L. D. Mason for his offer of a prize for the best essay on "The Pathological Lesions of Chronic Alcoholism Capable of Microscopical Demonstration." Also that this association express its high appreciation of Dr. Mason's effort to enlarge the bounds of exact knowledge in this field, and join with him in the confident hope that other efforts of similar character will speedily follow. This was carried unanimously.

Dr. Bradner offered a resolution that a committee be appointed to report "on nostrums advertised to cure alcohol and opium inebriety." Carried. The chair appointed on this committee Dr. N. R. Bradner, of Philadelphia, Pa.; Dr. C. H. Barber, of Brooklyn, N. Y.; and Dr. J. B. Mattison, of Brooklyn, N. Y.

The following papers were read: "The Basis of Remedial Science," by Dr. E. P. Thwing, of Brooklyn, N. Y.

This was a plea for more accurate study of the facts of psychological science, showing their relations to every day life, and our knowledge of the nature and causes of inebriety. Dr. L. N. Baker, of Baldwinville, Mass., read a paper on "What Shall We Do with the Inebriates?" in which he presented the practical need of exact study and control in hospitals especially adopted for them. Dr. Barber, of Brooklyn, N. Y., read the next paper, on "Morphinism," which discussed the general character and treatment of this disease. Dr. Wright, of Bellefontaine, Ohio, gave some very practical "Observations on the Jurisprudence of Inebriety," in which he urged the absurdity of calling inebriates sane who had been often intoxicated for years. The "Hygenics of Inebriety," by Dr. Day, of Boston, Mass., was read next. He discussed the power and influence of hygiene in the causation and treatment of inebriety. Dr. Kerr, of London, England, sent a paper which was read, on "The Progress of the Study of Inebriety in England," a historical review of the growth of the idea of disease and its practical development. Dr. Bradner, of Philadelphia, Pa., read a paper "On The Treatment of the Morphine Habit," in which he discussed the various appliances and remedies found of most value. Dr. Shepard read a paper on "Turkish Baths in Nervous Diseases," and showed that this remedial means was not yet recognized as it should be, and was of far more value than other remedies. Dr. Mason read a paper on "Pathological Changes in Chronic Alcoholism," giving a resumé of the general facts which had been discovered that were the results of alcohol on the tissue. Dr. Crothers, of Hartford, Conn., read the last paper, on "Alcoholic Trance." This was a review of the latest facts and some corroborative cases illustrating this alcoholic state. Interesting discussions followed the reading of most of these papers.

The following new members were elected: C. S. Elliott, M.D., Toronto, Canada; W. B. DeWees, M.D., Selma, Kansas. Telegrams were read from Dr. Parrish and others, regretting their inability to attend, after which the society adjourned.

Abstracts and Reviews.

A CLINICAL STUDY OF ALCOHOLIC NEURITIS

BY FRANK R. FRY, A.M., M.D.

Clinical Lecturer on Diseases of the Nervous System, St. Louis Medical College, etc., etc.

An American physician, Dr. Jackson, of Boston, described alcoholic paralysis in 1822, calling attention to certain conditions of the nervous system, more or less characteristic of the drinking habit. His is the first recorded clinical account of the affection. He did not, however, understand its pathology.

Dumenil, in 1864, first drew attention to the neuritic origin of the motor and sensory disturbances of alcoholic paralysis. In 1876, Eichhorst demonstrated, in a case of acute general neuritis, degeneration of the peripheral nerves without any pathological changes in the brain or cord. Within the next four years, Joffroy, Leyden, Lancereaux, and Grainger Stewart demonstrated the same fact in many cases, giving an impetus to the work that has followed. For the last five or six years the phenomena of multiple peripheral neuritis have been under close clinical and microscopical scrutiny. Data have accumulated rapidly, until neurological literature especially, and general medical publications as well, have been so full of the subject, particularly for two years past, that the characteristics of the various forms of neuritis are becoming well known. Conditions that went unobserved a few years ago, or if observed were not understood, now have a well written clinical and pathological history, within reach of the profession everywhere, forming a satisfactory basis for our present and future study in this field.

CASE I. Mrs. C. B., æt. 26, housewife. I saw patient first Jan. 9, 1888. Temperature 102.5° F., the pulse and respirations correspondingly increased. She lay in a condition of semi-stupor, her mind wandering, only answering questions and conversing when temporarily aroused, the contents of bladder and bowels passing involuntarily and frequently; complained of much pain when her lower limbs were handled or moved; apparently, complete paraplegia; all the extensors of the upper extremities paralyzed; wrist-drop, both sides; slight power in flexors of fingers; no knee-jerk. On account of her condition tests of sensation unreliable; slight pressure on the muscles, especially of the calves, caused much complaint, and would quickly arouse her from deep sleep; condition remained about the same for ten days, then temperature fell; she took nourishment freely, mind brighter but bad memory, especially for recent occurrences, and occasional delusions. After improvement, found impairment or loss of temperature and tactile sensibility from the toes to the waist line, and impairment of the same to less extent in hands and forearms; a rapid atrophy of the muscles of the lower extremities, less of the upper; did not gain full control of the sphincters for some weeks.

History: About two weeks before the date at which I first saw her she had gone to a wedding on a very cold day, remaining all the afternoon and most of the night. Going and returning and all the evening she was very chilly, could not get warm. The following morning when she awoke found herself strangely helpless in trying to turn over in bed. On attempting to get on to her feet she was barely able to stand. From that time there was a steady increase of the numbness and paralysis. The patient and her husband denied that she used much alcohol. The attending physician had told me on our way to visit her that she did. A relative afterwards confirmed this statement. The patient finally admitted that she drank beer and whisky all the time. A note made March 25th shows that there was then evidence of a rapid improvement, which was uninterrupted until she

was well. Note of the time when she began to walk again is lost. A note made Feb. 15th, some five weeks after first visit, shows that there was at that time a reaction of degeneration (of greater or less extent) of most of the muscles of all extremities. The dorsal and palmar interossei of both hands reacted normally to the current. Her hands were very thin and flexible, on which account it was possible to demonstrate the action of these small muscles very perfectly, making an unusually interesting spectacle. I last saw the patient Aug. 15, 1888. She was perfectly well, so far as she can tell, in all respects. Only after a long walk or standing on her feet all day does she experience any uncomfortable-ness, and that in the way of a weak feeling in the ankles. Sensation is good. The knee-jerk is absent (or so nearly so that I could not get it by the ordinary methods of testing, with *reinforcements*). The treatment consisted of large doses of ergot and iodide of potassium at first, and later of *nux vomica*.

In this case alcohol was probably the predisposing cause and exposure to cold the exciting cause of the attack. In many cases alcohol probably acts as a predisposing cause only. The following case, like the above one, would seem to indicate this fact. The same may possibly also be said of case VI.

CASE II. I saw at the St. Louis City Hospital last winter. For the privilege of consulting the notes of it I am indebted to the superintendent, Dr. Dalton, and his assistant, Dr. Pierce. L. C. M., æt. 38, laborer, admitted Dec. 23, 1887, discharged March 31, 1888. No knee-jerk, complete paraplegia, very little power or motility in hands and arms; had to be fed, complained much of myalgic pain. Diagnosis of multiple neuritis was soon made. He improved rapidly, and when discharged was able to do general detail work about the hospital. History: When admitted he had just reached the city from the far West, where he had been "tramping" for the two past months, often sleeping out, and almost constantly exposed to winter weather. During

these two months he had had very little to drink in the way of alcohol, but for the greater part of his life before, at least for several years, he had been a hard drinker.

The fact that he had recently used but little alcohol, and had been exposed to cold, damp weather for so long a time, suggest that the former was a predisposing and the latter the immediate cause, or at least that they were common causes.

CASE III. Andrew Smart, M.D., F.R.C.P.E., read the report of a case of multiple neuritis of combined syphilitic and alcoholic origin before the Medico-Chirurgical Society of Edinburgh, May 2, 1888,¹ the essentials of which are as follows: A widow, æt. 37. Four of her five children died in infancy, the survivor, a boy of ten, in delicate health. Had two miscarriages, suffered from menorrhagia during all her married life. Two months before her admission to the Royal Infirmary of Edinburgh, Nov., 1887, she began to experience a difficulty in walking and feelings of cold and numbness, and pricking and tingling sensations in her feet and legs, and later, actual pains and much distress. Just before admission the same pains were coming in her hands. When admitted she could not walk or stand, attempts to put her on her feet causing her much pain. Her decubitus was on the right side, with the knees drawn up, feet rigidly extended, toes drawn under; attempts at voluntary motion caused her pain; even slight attempts at passive movements caused much myalgic pain, especially in the calves of the legs; sensibility not accurately ascertained on account of excitable condition of patient; knee-jerk and ankle-jerk abolished; sphincters not impaired. Electric tests elicited a feeble reaction of degeneration. Marked defect of memory and emotional depression; no delusions or hallucinations. Later she had wrist-drop, and the tactile sensibility of the hands was found defective. The history of a drinking habit

1. A Case of Multiple Neuritis of Combined Syphilitic and Alcoholic Origin; Treatment by Electro-Massage; Complete Recovery. By Andrew Smart, M.C., F.R.C.P.E. Read before the Medico-Chirurgical Society of Edinburgh, May 2, '88.—*Edinburgh Medical Journal*, July, 1888.

was immediately ascertained, and all stimulants were withdrawn, but the patient had been under treatment for some little time before the signs and a history of syphilis were discovered. The adoption of antisyphilitic medication was successful beyond expectation, the improvement being prompt and rapidly progressive until the patient was well.

The probabilities are, as claimed by the reporter, that syphilis and alcohol were both actors in the causation of the neuritis in this case.

Unquestionably alcohol is a frequent cause of peripheral neuritis. Is alcoholic neuritis pathologically different from other neurites? Are there any reasons, from a pathological standpoint, why we may not assume that alcohol becomes a common factor with other agents in the causation of a neuritis? Bramwell has recently said: "Whether the neuritis produced by alcohol presents any pathological (microscopical) characteristics by which it can be distinguished from the peripheral neuritis which occurs in locomotor ataxia, phthisis, diphtheria, diabetes mellitus, and from the multiple peripheral neuritis, which (since we know not its exact cause), is termed idiopathic, has yet to be determined. It may, however, be broadly stated that in all these conditions the lesion resembles more or less closely the degenerative changes which Ranvier and others have described in the peripheral ends of divided nerves."

During the first ten days that Case I was under my observation there was a considerable elevation of temperature, often 102° and 103° F. She had also had fever for several days at least before I saw her. An interrogation of all the organs did not afford an explanation of it. While there was evidence of a drinking habit, there was none of a recent debauch; neither had alcohol been suddenly withdrawn, but was continued in small quantities. There was no evidence that the fever had its origin in any known infectious cause. The cerebral symptoms, persisting as they did, suggested the probability of trouble in that direction. The distribution and onset of the paralysis left room for only two

possible explanations, either a peripheral neuritis or an acute poliomyelitis. The absence of any satisfactory information in response to various tests of sensibility, the persistence and completeness of the sphincter-paralysis, suggesting central disease, made a diagnosis of neuritis not altogether satisfactory. The fever finally departed quite abruptly, and, although considerable amnesia and occasional hallucinations remained, the stupor immediately disappeared, and her mind was comparatively clear, so that a more complete history and a more satisfactory examination could be obtained.

No doubt the presence, or at least the extent of neuritis in alcoholic cases has often not been recognized on account of complications that either mislead the observer or interfere with a satisfactory examination. The following case, more forcibly than Case I, reminds us of the truthfulness of this observation. Many of us have seen similar ones, especially in the charitable hospitals of a large city. The history of the case and microscopical specimens of the post-mortem examination were presented by Mr. Sharkey at a recent meeting of the Pathological Society of London.*

CASE IV. A woman, age not given, under observation from August 27 to September 25, 1887. Had been a hard drinker, principally of whisky and beer. She had been losing flesh and strength, and was very weak in her legs. She had also complained of numbness and cramps. On admission she could understand well enough what was said to her, but was incoherent in her replies. Respiratory sounds harsh, but no evidence of pulmonary disease; liver enlarged and hard; no albumen in the urine; legs wasted, especially on front of tibiæ; she could neither walk nor stand. The legs were tender, both superficially and on deep pressure; temperature normal; tremors of the tongue and lips. A few days later she had a rigor; her temperature went up to 102.8° F. On September 13th, she had two severe attacks

* Alcoholic Paralysis of the Phrenic, Pneumogastric and Other Nerves; Specimen presented to the Pathological Society of London, April 17, 1888. By Seymour J. Sharkey.— *British Medical Journal*, April 21, 1888.

of dyspnoea, and it was then noticed for the first time that the diaphragm was completely paralyzed. There was also a difficulty in swallowing. Respiration 40 per minute. On the morning of the 15th she began to spit blood. The average pulse rate was 140. On the 23d the apices of the lungs showed signs of breaking down. On the 25th she died in a sudden access of dyspnoea. On post-mortem examination there was found tuberculosis of the apices, cirrhosis of the liver, the kidneys normal, the spinal and cerebral membranes healthy, the brain normal throughout; in the dorsal and lower cervical regions of the cord there was softening, which seemed to be pathological and not post-mortem. The microscope revealed slight general inflammatory vascular changes throughout the whole central nervous system, though the changes were trivial except in the lumbar enlargement.

"The brunt of the disease had evidently fallen on the peripheral nerves, inflammatory changes being intense in the phrenic, pneumogastric, and popliteal nerves. There were also inflammatory changes in the muscles supplied by the nerves."

The immediate cause of death in this case was the disease of the pneumogastric and phrenic nerves. Without the thorough microscopical examination that was made, it would have been impossible to positively establish this fact. In the absence of such an examination in similar cases, the cause of death, no doubt, has been assigned to cerebral trouble not infrequently.

Much stress has been placed on the sensory symptoms as an aid to diagnosis; but besides the fact of the difficulty that there is at times in making satisfactory tests, it must not be forgotten that there is also in some cases a singular absence of sensory disturbance, or at least only a slight interruption of the normal sensibility. Bramwell reports a case of the kind.

CASE V. The symptoms, history, and progress all show it to have been a case of alcoholic paralysis, in which the

knee-jerk was entirely absent, the muscles of the lower extremities much atrophied, and so powerless that the patient could not walk. Yet there was no myalgic pain, nor in fact pain of any description during the whole attack. The patient complained of some numbness in the lower extremities, but she localized impressions perfectly. There was very slight evidence of any affection of the cutaneous sensibility until the period of convalescence, when marked hyperesthesia of the skin of the lower extremities was developed.

The fact must also be borne in mind that occasionally in acute cases of anterior poliomyelitis there are, especially in the incipency of the disease, sensory disturbances.

The knee-jerk is almost invariably abolished. The following case presents an exception to the rule in this respect, and other interesting features. It is reported by Dr. Chas. Starkel, of Belleville, Ill. I had the privilege of seeing the patient several times and of examining him carefully.

CASE VI. G—, æt. 23, a physician, first noticed in 1885 peculiar sensations in his feet and legs. Two months later he first noticed a loss of muscular power in these extremities. Since October, 1886, he had been practically confined to the house, with the increasing paralysis. When he came to Dr. Starkel, a few days before I first examined him, he thought he had locomotor ataxia and had lost all hopes of recovery. The notes of our first examination in March, 1887, are briefly as follows: Muscles of legs and thighs much atrophied and flabby; feet always cold; voluntary and passive movements of lower extremities cause much pain; sensibility (of the skin) much impaired as determined by tactile, temperature, and faradic tests. A very strong faradic current was not complained of from the toes until more than half way up the thighs; reaction of degeneration; pressure on muscles of lower extremities, especially the calves, caused excruciating pain, compelling him to cry out. The *knee-jerk* was *much exaggerated* and was only produced at the expense of great pain to the patient. Locomotion was only possible by grasping firm articles of furniture about the room, or with

the aid of attendants, and was accompanied with much pain. From pain, loss of sleep, and worry he was much reduced; he was vomiting every morning and had little appetite.

He had been much exposed to cold, wet weather during the three years previous to the time we first saw him. Twice within that time he had slept, when fatigued, in wet clothes. He was conscious of sustaining no immediate untoward consequences, and he was not intoxicated on either occasion. He had almost constantly drunk whisky in considerable quantities, from an early age. For the past few months he had only used it in limited quantities.

A note made in June, four months after first examination, shows that there had been remarkable improvement. The muscles were gaining rapidly in size and becoming hard. Sensation was almost normal again except in the feet. The patient was taking comparatively long walks with comfort, and feeling quite well in all respects.

The treatment consisted in the withdrawal of all alcohol, ergot in dram and half dram doses for eleven weeks; mild galvanism and gentle massage, continued almost daily for three months; nux vomica after the eleventh week.

Buzzard, Struempell, and Moebius have reported cases of multiple neuritis in which the deep reflexes were exaggerated. The two latter authorities have offered an explanation of this unusual occurrence to the effect that the exaggeration is due to an irritation of the sensory portion of the reflex arc, *i. e.*, in the sensory nerves. Here is an exceedingly interesting fact. To explain it we need more information. In one case (V) there is little evidence of impairment of the sensory nerves of either muscle or skin, but an abolished knee-jerk; in another case (VI) indubitable evidence of grave lesions of the nerves of both muscles and skin, yet an exaggerated knee-jerk.

In case I there was an unusual involvement of the sphincters of the bladder and rectum. More than six weeks passed before she had good control of them; and for about two weeks they were completely paralyzed. Whether the

nerves controlling them were included in the general neuritic process, or whether the sphincter-inability was due to general feebleness and muscular atony from fever, etc., can not, of course, be positively decided. But as we observe it, it impressed us as being a paralysis proper. The patient, while not able to control the sphincters, was always conscious enough to complain immediately of her soiled condition. Furthermore, the weakness of the sphincter continued after she was rapidly gaining in general strength.

I have not seen an involvement of the sphincters mentioned in any case thus far reported. On the contrary, many writers make an unqualified statement that they never are affected.

Unquestionably small quantities of alcohol are sufficient to protract and aggravate a neuritis of which it has been the exciting cause. Proof of this is the rapid improvement in all uncomplicated cases following its absolute withdrawal. Cases I and VI were neither of them taking much alcohol at the time they came under my observation; but it was, of course, promptly and entirely discontinued in both instances. I hardly think, however, that this fact alone explains the very rapid improvement, especially in case VI. Within a very few days the acute pain and general distress had almost disappeared and he was fast gaining strength. As stated above, ergot was given in large doses. The ether spray was used also but only to a very limited extent. A mild galvanic current was employed, which, by the way, had to be very mild not to cause muscular pain. On this account the quantity of electricity used was so exceedingly small, and the length of seance so short for the first few days that I am not disposed to allow it much credit in the curative process until later when it was borne in greater quantities. I have not seen ergot recommended in neuritis, but I believe that, aside from my limited experience with it, there are rational grounds for so using it, at least, until it had a fair trial.

RECAPITULATION.

(1) Alcohol is probably a common factor with other agencies in the production of some cases of neuritis (cases I, II, and VI).

(2) The sphincters are probably occasionally involved (case I).

(3) The deep *reflexes* are sometimes exaggerated (case VI, and others previously reported).

(4) In diagnosis, not infrequently, little aid is to be had from sensory symptoms, and too much reliance must not be placed on tests of sensibility (cases I, III, and V).

(5) In the presence of complications or of distracting symptoms, especially cerebral symptoms, the existence of extensive peripheral neuritis may be overlooked, and especially if it affect one or more of the cranial nerves, as for example, the pneumogastric (cases I and IV).

(6) The onset may be very acute, the disease developing within a few hours with pyrexia, etc., or very slow, not reaching its acme for two years (cases I and VI).

(7) A trial of ergot in dram and half dram doses t. i. d. is recommended in the treatment of multiple neuritis.—*St. Louis Courier of Medicine.*

REPORT OF THE FRENCH COMMISSION AP-
POINTED BY THE SENATE TO INVESTI-
GATE THE CONSUMPTION OF
ALCOHOL IN FRANCE.

This commission was appointed in 1886, and reported in 1888. The following abstract of their work is taken from Dr. Drysdale's report to the Medical Temperance Association.

In 1873, the Senate passed a very useful law for the repression of drunkenness; but since that day the diseases of the vine—the oidium, and the phylloxera—had completely revolutionized the drinking customs of France, spirits having

taken the place of wine, and the spirits having been distilled no longer from wine, but from grains, potatoes, plums, apples, and pears. These alcohols being extremely toxic, had of late years caused a great accession of insanity, suicide, and criminality in the districts where they are most consumed. The license duty in France was very low, the keeper of a public-house in small communes paying only 15 francs per annum, and in large cities only 50 francs for the license to sell alcoholic drinks. The duty on alcohol in France was 150 francs per hectolitre of pure alcohol contained in brandy, and 218 francs per hectolitre of that contained in liquors — *i. e.*, absinthe. The permanent surveillance of distilleries in France was carried out by employees appointed for this purpose. The commission adverted to the evidence afforded by chemists as to the adulterations of ethylic alcohol. The most common of these were aldehyde, acetic ether, propylic, butylic, and amylic alcohols, and some essential oils, many of which were deplorably toxic.

According to two witnesses, all alcohols were toxic. These gentlemen found that 8 grammes of ethylic alcohol per kilogramme weight of body, injected subcutaneously in animals, proved fatal, while one gramme of acetic aldehyde, four of propylic alcohol, two of butylic, and two of amylic alcohol produced death. Methyl alcohol was similar in its toxic qualities with ethylic alcohol, and even glycerine was equally toxic when subcutaneously injected. The experience of Sweden, where alcohol was distilled from potatoes, was in accord with these results of experiment, and the lesions caused by that spirit was very great. Dr. Lunier called attention to the grave character of the diseases caused by spirit drinking in those districts of France where spirits not distilled from wine were used. One witness, Dr. Lancereaux, of Paris, said that alcoholism attacked not only the drinker, but affected the health of his children. He divided the lesions caused by alcohol into two groups; those which affected the connective tissue of the organs, causing ad-

hesive inflammations, and those represented by fatty degenerations of the organs. The first-named lesions were seen in the stomach, liver, and other organs traversed by the alcohol; the second was seen in the fatty degeneration of the heart, and other muscles. The latter effect tended towards precocious senility, and enfeeblement of the muscular and procreative functions. He alleged that the children of drinkers were very subject to nervous diseases, hysteria, and convulsions, and had a proclivity towards drunkenness, Epilepsy and infantile paralysis and tubercular meningitis were, according to Dr. Lancereaux, favored by inheritance from drinking parents; and he contended that this was one of the causes of the degeneration of the population of the Pacific islands, and, also of the children in Normandy, where alcohol was distilled from cider, cherry, and beet-root, and where the mortality of the children was extremely high. Dr. Lancereaux recommended that no alcohol should be sold for human consumption save that which was found to be chemically pure ethylic alcohol, and also that the number of licensed houses should be lessened by law. Formerly in France the only spirits consumed were distilled from wine. Thus, from 1840 to 1850, no less than 815,000 hectolitres of brandy were thus fabricated; but since the diseases of the vine, in 1885, out of a total of 1,864,000 hectolitres of spirits which paid duty in France, only 23,000 were brandies distilled from wine. Owing to a law of 1875 farmers who distilled wines, cider, or spirits from the produce of their own farms paid no duty for this. Consequently, it had been estimated that in 1884 no less than 1,934,000 hectolitres had been produced in this clandestine manner, and most of this spirit was extremely impure and toxic in its qualities. In 1885 the consumption of spirit in France was 3.85 litres per head, and as only one-eighth of the population were supposed to consume this, the annual consumption per head of the spirit drinkers was about 30.80.

The number of public-houses per head of the French population in all France was 1 in 94 inhabitants in 1885, but in

some districts the proportion was 1 in 62 inhabitants, while in others it was only 1 in 200. The cost of spirits annually in France, sold at 4 francs the litre, represented about sixty-four millions sterling. The act passed in 1873 had thirteen clauses directed towards the repression of drunkenness, and had been of much service in large towns, although often evaded in country parts. The north of France had by far the greatest number of convictions for this vice; the north-west having 29 per cent. of all the convictions, and the north 34 per cent.; whereas the south contained only 4 per cent. of the convictions. The districts where alcohol was most consumed furnished the greatest number of exemptions from conscription. Thus Seine Inférieure in 1886 had no less than 34 per cent. of exemptions for various infirmities, and Isle and Vilaine 40 per cent. In 1885, 538 deaths from accident were caused by alcohol, and 52 per cent. of these occurred in the spirit-drinking districts of France. As to alcohol causing suicide, in 1836 only about 5 per cent. of suicides were attributed to that cause, but in 1885 the proportion was 11 per cent.; and in Manche, where drunkenness prevailed, no less than 35 per cent. of the suicides were drunkards. The various asylums of France showed great differences as to the proportion of alcoholic lunatics contained in them. In one asylum, Quartre Mares (Seine Inférieure), 40 per cent. of the lunatics were made insane by spirit-drinking; while in Paris only 2 per cent. of the cases of insanity were attributed to drink. The commission published an account of the amount of the alcohol consumed per head by the inhabitants of different civilized States. Germany paid per head 1.75 francs duty on alcohol, and 8.23 litres of pure alcohol were estimated to be consumed per head. Potatoes, grains, flour, starch, and molasses were used for the distillation of spirits in Germany. Dr. Baer found, among 27,598 male prisoners in Germany, 12,141 drunkards; and among the lunatics of Prussia 15 per cent. were estimated, among the males, to be caused by alcohol, and 1 per cent. among the females. In England the duty on pure

spirits was 477 francs per hectolitre, the duty per head of population 12 francs, and the consumption $2\frac{1}{2}$ litres of pure alcohol. In Austro-Hungary the duty was only 27 francs per hectolitre, and the consumption per head 3 litres of pure alcohol. In Belgium the duty was 74 francs per hectolitre, and the consumption 4.20 litres of pure alcohol per head. There was one public-house to every forty-four inhabitants. In Denmark the duty was 27 francs per hectolitre, and the consumption per head 9 litres of pure alcohol. Thirty per cent. of the paupers and 36 per cent. of the suicides in Denmark were attributed to drink. In Italy the duty was 150 francs per hectolitre, and the consumption about 1 litre per head. In Holland the duty was 252 francs per hectolitre, and the consumption of pure alcohol per head $4\frac{1}{2}$ litres. Imprisonment not exceeding five years might be imposed for habitual drunkenness. In Russia the duty was 260 francs per hectolitre, and the consumption per head $3\frac{1}{2}$ litres of pure alcohol. In Sweden the duty was 145 francs per hectolitre, and the consumption of pure spirits $4\frac{1}{2}$ litres per head. The societies called *Bolag* in Sweden had diminished the number of public houses. In Norway the duty was 187 francs per hectolitre, and the consumption of pure alcohol 1.75 litres per head. In Switzerland a law passed in 1886 gave the state the monopoly of all alcohol manufactured. The consumption per head was 5 litres of pure alcohol. Twenty per cent. of the cases of insanity were estimated as being due to alcohol in Switzerland. In Canada the consumption per head of pure alcohol was 1.95 litres, and the duty 240 francs the hectolitre. In the United States the duty was 245 francs per hectolitre, and the consumption of pure spirits per head $2\frac{1}{2}$ litres. Thus England paid the highest duty (477 francs per hectolitre), and Baden the lowest (23 francs per hectolitre), while Denmark had the highest consumption of pure alcohol per head (9 litres), and Italy the lowest (1 litre).

After hearing this important evidence the commission approved by the French Senate thus concluded: "The

present position of affairs is graver than ever. A certain number of our departments are threatened with a rapid degeneration of the race. Alcoholism is a cause of great misery, and has already assailed the well-being of the community." They therefore recommended, firstly, the abolition of all private distilleries, and prohibition of the sale of all spirituous liquors containing alcohols injurious to health. All toxic alcohols should be got rid of from the market, by the establishment of rectifying houses, to which all spirits should be sent. They further recommended that none but chemically pure alcohols should be permitted to be added to any wine, and that no wine should contain more than 12 per cent. of such alcohols. They recommended the sugaring wines in preference to the addition of alcohol to them, and finally proposed that licenses to sell alcoholic drinks should be four times as heavy as these were now in France.

INEBRIATE ASYLUM AT HEIMDAL, NORWAY.

The *Temperance Record* contains the following description of a pioneer asylum in Norway. This institution has been in operation about five years, under the charge of Dr. Flood :

At present there are only six patients, but three times that number can be received, and as many as sixteen have been there at once.

The methods pursued by Dr. Flood are as follows :—

1. Total abstinence from all intoxicating drinks, except in some cases, and then only for five days, after which time none is allowed. Dr. Flood said that at first he enjoined absolute prohibition from the moment of entrance, but finding that an attack of delirium tremens often followed the sudden cessation of drinking, and, on one occasion, death ensuing, he felt he was wrong to push his own ideas to such an extent as to endanger the lives of his patients. So he said, "I sometimes allow a small quantity for five days, after which time there is no danger, and then I prohibit it alto-

gether, and I always impress upon the inmates that life-long total abstinence is absolutely necessary for them."

2. Regular habits, punctuality with meals, and stated times for work, study, recreation, or walking, getting up and going to bed.

3. A good deal of out-of-door exercise, part of it manual labor. At least one hour a day is spent at work in the garden or field — indoors, carpentering, turning, carving, etc. while some of the patients study certain hours a day.

4. Moral and religious influence. Family worship is held twice a day, at which a psalm is sung and a short exhortation read, and on Sunday the service is much longer — more singing, reading, and prayer, as well as a sermon. Dr. Flood prefers to have the service in the house, and not expose the patients to the temptations they would meet with in the town, or by making acquaintances in the neighborhood.

The patients are not allowed to have any money, and they are not permitted to go out alone. Still, they are not treated quite like prisoners. They go out in twos or threes, and one is entrusted with a little care or supervision over the others. This plan is found to answer well, the gentlemen themselves preferring it to that of having a keeper. Heimdal is well situated in regard to temptation, or rather the absence of it. In all the drives and walks I took round about, I did not see any place where drink was sold, except in Tonsberg, the nearest town, and there none of the patients are allowed to go, unless it is on some special occasion, and under special guidance. The length of time the patients stay in the home varies from six to twelve months. All are received with their own consent, and they are all gentlemen pretty well-to-do. The average number that have been effectually reclaimed is 50 per cent., Dr. Flood tells me.

Heimdal is Dr. Flood's own private concern, and he is not acting under any committee or board of direction, though there are a few gentlemen with whom he sometimes takes counsel, and his brother is his constant companion and

helper. His wife and daughter also live with the patients, and lay themselves out for their benefit or amusement.

GOD AND MAN.—A PHILOSOPHICAL INQUIRY INTO THE PRINCIPLES OF RELIGION; By HENRY T. BRAY. ST. LOUIS, MO.: NIXON-JONES PRINTING CO., 1889.

This volume from a clergyman deals with the problem of the harmony of religion with science. It is a clear, well-written presentation of the facts, maintaining that the science of the present day is markedly religious. The author is an evolution philosopher, and gathers a great variety of evidence from the Vedas, the Chinese moralists, Greek philosophers, and others, bearing on this topic. This work will be read with great interest, and we commend it to our readers most heartily.

THE MEDICAL JURISPRUDENCE OF INEBRIETY; PUBLISHED BY THE MEDICO-LEGAL JOURNAL ASSOCIATION, 57 BROADWAY, NEW YORK CITY.

This volume contains the papers read before the New York Medico-Legal Society, seventeen in number, with the discussions which followed. This society, through its distinguished president, Hon. Clark Bell, has done a great service to medico-legal science in thus grouping the most advanced views on this subject, by experts in both professions. The volume as a whole is very suggestive, and outlines a vast field of study that will be occupied in the coming century. No critical review can be made of such a volume, because it discusses questions that are new and unknown to the profession. This discussion was without any plan, except to invite leading experts to write such papers as they might deem best. Hence, one would naturally expect some difference of opinion. In reality, a remarkable agreement is apparent in all the papers on the question of the disease of

inebriety, and the need of facts from which to measure the legal responsibility. It is also a matter of surprise that so many practical facts should have escaped notice and appear now for the first time. Two opinions of this volume illustrate it clearly. One by an over-wise man, who had no time to read it, and who pronounced it extravagance, and a theme unworthy of this society. The other, a student, although a learned judge, who read it carefully, and remarked: "that it was a most excellent pioneer work, that did honor to the Medico-Legal Society, in its conception and execution. Also only from such presentations of any new subject could we expect advance."

This is without doubt the most important volume, medico-legally, which has appeared. It is sold at fifty cents, to ensure a large sale. Every reader should have a copy.

EATING FOR STRENGTH, OR FOOD AND DIET,
AND THEIR RELATION TO HEALTH AND
WORK; M. L. HOLBROOK & Co., NEW YORK CITY.
1889.

This is the title of a work by the veteran editor of the "Herald of Health," Dr. Holbrook. The plan of the book is to show the relation of different foods to work and health. He gives analyses of foods and also receipts for foods and drinks, giving many very interesting facts in a popular form. While the reader may disagree with the author in many respects, he will find facts of much interest. The work is well printed and the volume will have a large sale.

The "Wide Awake," published by D. Lothrop & Co., of Boston, Mass., is one of the most sensible, charming magazines published for both young and old people.

The Humboldt Publishing Company, of New York city, have for years published the best scientific works, in a popular form, and from fifteen to twenty-five cents a volume. The following titles of some of the last numbers will con-

vince the reader of the value of these works: "Factors of Organic Evolution," by Spencer; "Cosmic Emotion," by Prof. Clifford; "Nature Studies," by Prof. Love, Dr. Brown, and others; "Aesthetics, Dreams, and Association of Ideas," by Prof. Lilly and Prof. Robertson. "The Coming Slavery, the Sins of Legislators," by Prof. Spencer; "Tropical Africa," by Prof. Drummond; "Freedom in Science and Teaching," by Earnst Herckel. One hundred and five volumes have been issued so far, comprising some of the most valuable works of science. Send for a catalogue.

The "Phrenological Journal" appears in a new dress, and is a most attractive journal, under the care of the very able editor, Dr. Drayton.

The "Good Health," under the management of Dr. Kellogg, is one of the best popular health journals printed. Send for a copy, to Battle Creek, Michigan.

The "Physician's Visiting List" for 1889, published by P. Blakiston, Son & Co., is eminently practical, clear, and concise. It is one of the best pocket records on the market. Price \$1.

The temperance people of Denmark have petitioned the government to aid in establishing an asylum for inebriates, on the island of Anholt. A general meeting for this purpose will be held in January, '89. This asylum is to be built on the island where the first temperance effort originated, in 1879.

A retreat for inebriates was formally opened for patients at Eilikon-sur-le-Thour, in Switzerland, December 3, 1888. The buildings are detached from each other, and classification and work are to be strictly carried out. Public meetings have been held in Zurich to obtain aid for this plan. Over six thousand dollars have already been expended on the buildings.

The "Popular Science Monthly" begins the new year with many exceedingly able articles. This monthly is invaluable to every physician, and every scientific man should read it carefully.

The "Science Weekly" has become one of the great periodicals of the day. Every number is a volume of most absorbing interest for scholars. Send to Science, 47 Lafayette Place, New York city, a subscription for a year, and you will be a permanent subscriber.

The "Scientific American" gives views and descriptions of every new invention from week to week, and is of great value and interest to all readers. Send to Munn & Co for a copy.

Dr. Round, secretary of the New York State Prison Association, writes as follows in the *Homiletic Review* on heredity: "I deal much with criminals, and I see the children of Christian parents among them, poor miserable moral wrecks. I know in some cases that the son is in prison because the father went to the pantry between meals, and failed to take baths as he ought. I know of men in prison with not enough physical force to clothe their moral impulses with action, and I look back and find that the father and mother were Christian people, who used up all the energy of the family in their own times, and left nothing for the generation to come. I know of a dipsomaniac who commits wild excesses in his cups, and whose power of resistance to benefit him only suffices for one-half of his time. He inherits his weakness of will. His father could not say no to anyone who asked him to engage in any good work. He could not resist the temptation to work through vacation time, to preach three sermons a week and more, and so he tasted sour grapes before he died, and was broken down before his time. The feeble resistance extended to the next generation, and left them lower down in the scale of physical health."

Editorial.

PROGRESS IN 1888.

The trials of criminal inebriates, where the defense has been insanity and irresponsibility, have attracted great attention during the past year. Lawyers, courts, and experts, have differed widely, and the press have published long interviews and comments, and in some instances very bitter controversies have followed. The publication by the Medico-Legal Society of a volume on the "*Furisprudence of Inebriety*," is the first authoritative matter on this subject, and marks the beginning of a revolution of theory and practice in this field.

This subject of vice and disease in crime committed by inebriates, was discussed at the Cincinnati meeting of the American Medical Association.

The politico-temperance agitation of the past year has greatly increased the discussion of alcohol and inebriety among medical men, and the semi-scientific literature has grown enormously. Distinct scientific lectures on inebriety were delivered before the medical students of the Albany Medical College and Vermont University. Other lectures on this same subject in the regular college course were delivered in at least four medical colleges during the year. The publication of Dr. Turner's *History of Binghamton Inebriate Asylum* was a most important event. It gave the first history of the origin and growth of the first asylum for inebriates in the world.

The republication of Dr. Kerr's work "on inebriety," and its favorable reception, was gratifying evidence that it is welcomed by scientific readers. Other works on alcohol and inebriety have appeared. This, with Dr. Mason's offer of a prize for the best exact study of inebriety by the micro-

scope, and the very suggestive address and discussion by the London Pathological Society, which we publish, are unmistakable proof of the great advance of scientific study in this field. Four new asylums for inebriates have been projected, and five private asylums have been opened, during the year. Three State legislatures have appointed committees to report on the organization of such asylums.

In England the Habitual Drunkards Act, giving power to control inebriates, formerly limited to ten years, was made perpetual, the result of which has been the opening of a number of new asylums for the treatment of inebriates.

On the continent both temperance and scientific men have discussed inebriety, and some excellent reports have been made. Several new asylums for the treatment of inebriates have been organized. Moralists and scientific men are apparently not alarmed at the different conclusions reached. Unfortunately in this country temperance men assume dogmatic prescience of the whole subject, and content themselves in defending theories and empirical plans of treatment.

Fortunately the evidence of a new era of exact scientific study of the inebriate and his malady is unmistakable.

The direction of scientific inquiry in the year past shows the line of march for the future. The great facts and laws controlling them can only be known from scientific study by scientific men.

The committee appointed by our association, "*On Nostrums, Proprietary Medicines, and new Remedies*," will be a very important one. Dr. N. R. Bradner, of 514 South Third St., Philadelphia, Pa., is chairman, and will be glad to receive from the profession all facts relating to secret nostrums and remedies for the cure of inebriety, and histories of cases caused by these remedies.

The adjourned debate on chronic alcoholism, in the London Pathological Society, will be continued at the regular meeting January 15, 1889.

THE JOURNAL OF INEBRIETY for October grouped the most advanced conclusions on the heredity of inebriety, and many of the general facts upon which all authorities are agreed. In this number the pathology of inebriety is discussed, giving the latest facts and conclusions of the most eminent men. We hope in future numbers to continue this grouping of all the leading facts bearing on the various phases of this great subject. By this means the reader will obtain a clearer knowledge of the progress made in the study of inebriety.

THE RELATION OF PULMONARY CONSUMPTION TO INEBRIETY.

All practical students of inebriety recognize the close relationship between inebriety and phthisis. Recently Dr. Mays of Philadelphia has delivered two lectures before the Polyclinic "on pulmonary consumption considered as a neurosis." In these lectures he brings out many very suggestive facts showing the connection between these two diseases, and the heredity that alternates in one or the other. In the first lecture he reviews the scanty literature on the neurosis of consumption, and gives many very striking cases, in which hysteria and other neurotic troubles preceded this disease. Inebriety, epilepsy, and various neuropathic disorders in the ancestors were traced in all the cases. The conclusion sustained by this evidence was that consumption is often an expression of a diseased nervous system. In the second lecture the various symptoms of consumption were discussed, and also their neurotic meaning. Thus fatigue, exhaustion, loss of appetite, wasting, haemoptysis, and other symptoms, were traced to disorders of the peripheral nervous system. The conclusion that pulmonary consumption was essentially a neurosis of the peripheral nerves, and not a local disease, was well sustained.

The relation of consumption to inebriety appears in a new light from this discussion, and many of the clinical facts,

obscure and unexplainable before, have a new and very suggestive meaning. Dr. Mays has kindly promised to discuss this subject of the relation of inebriety to phthisis in the next number of this journal.

The whole field is one of absorbing interest, and while the clinical facts are many, and found in every day's experience, no one has yet studied them in this relation.

We shall look forward to Dr. Mays' paper with interest.

PROGRESS IN ENGLAND.

The recognition of a diseased condition in inebriety, and of the need for remedial treatment of that abnormal condition, is gradually making way in England. It is true that any disease aspect of drunkenness is strenuously denied by a considerable number of philanthropists and Christian workers. But the number of these doubtless is steadily decreasing as the truth is being rapidly disclosed. The discussions and quarterly "Proceedings" of the Society for the Study of Inebriety have had a marked influence on the medical, clerical, legal, philanthropic, and religious worlds. The scientific treatment of the subject by the members of this society has attracted a great deal of attention from leading men, and the whole movement on behalf of the inebriate as a sick man, has advanced by leaps and bounds, especially since the International Congress on Inebriety held in London in 1887. The papers by Drs. Crothers, Parrish, T. L. Wright, Mann, and Mason, who so worthily represented the United States at that congress, powerfully contributed to the speedy advancement of the question in public estimation. The importance, too, of the influence of the QUARTERLY JOURNAL OF INEBRIETY cannot easily be over-estimated. Two events of unusual prominence characterized the past year. The first was the publication of Dr. Norman Kerr's treatise on Inebriety or Narcomania, an attempt to treat systematically of its etiology, pathology, treatment, and jurisprudence. Though disputed only half-heartedly by one or two critics, the

main doctrine of the work has been accepted by the leading journals of medicine, law, and religion, as well as by the influential organs of the temperance cause. The other event was political, though not connected with party politics. The temporary Habitual Drunkards Act of 1879, which was about to expire, was replaced by the Inebriates Act of 1888. By this new measure legislation in the United Kingdom in the interests of the inebriate is now permanent, a matter of the highest import and significance. The energies of the Society for the Study of Inebriety, with whom the Inebriates Legislation Committee of the British Medical Association are in active coöperation, can henceforth be concentrated on the amendment of the law, energies which have hitherto been largely absorbed in securing the very existence of legislation. The main amendments now being agitated for all the power of compulsory committal to a retreat in certain cases, the provision of homes for the poor at the public charge, and the inclusion of other forms of inebriety beside the alcoholic. A protracted and resolute campaign lies before Englishmen in the struggle for these improvements in the Act, but success will ultimately be the issue. Meanwhile, the number of licensed retreats continues to increase, the government inspector having reported the opening of two new homes. The Dalrymple Home at Rickmansworth, a disinterested experiment at the scientific treatment of inebriety, conducted under conditions believed to secure a fair trial, has published the record of another year's effort, showing the satisfactory number of 36 patients in a total of 83 discharged from the institution, restored to the fulfillment of their wonted duties and, so far, cured. The history of each case is set forth in a tabulated statement, and thus the scientific work at Rickmansworth is recorded for future reference. Professor Kinkead of Galway has issued a printed *brochure* laying down that insanity and inebriety are diseases which call for curative treatment, and which, in some cases, ought to absolve from criminal responsibility. He insists that power should be given to place the inebriate

nolens volens under suitable restraint, and contends that in addition the relatives and guardians ought to be held responsible for damage done by an inebriate while under their care or control. The latter proposal calls for serious deliberation.

N. K.

HABIT CASES.

The use of the term Habit and Habit cases applied to inebriety is inexact and misleading. The popular sense of this term would be something voluntarily acquired and retained as a habitual tendency, with the possibility of being thrown off at any time. Scientifically this meaning of the term presumes a physiological and psychological knowledge of the brain and its functions that is not yet attained. The word habit should be used to express an organic condition of unconscious memory, which recurs at intervals in obedience to some unknown physiological state. The organic functions are carried on automatically by virtue of this power of memorizing, possessed by their controlling centers, hence habits are the result of this unconscious memory. Disease is in many cases a habit contracted from abnormal impressions often repeated and finally memorized and made permanent. Many periodical diseases may be described by this term habit, but undoubtedly it should not be used where exactness of meaning is intended. To describe cases of inebriety it is a very unfortunate word, and one upon which there will be always difference of meaning.

In reply to some inquiries we would say that the *Alcohol Commission Bill*, which has been defeated in Congress many times, has our warmest sympathy and support. The *National Temperance Society*, who have urged this bill with great energy, should have the aid of every scientist in the country. Every friend of temperance should concentrate their efforts on this one measure, and thus lay the foundation for exact facts, from which there can be no disagreement.

Are criminals always insane, and should they be treated as lunatics until they give sufficient evidence of their cure and restoration? Prof. Binswanger of Jena urges this view, and affirms that the criminal is only an expression of mental troubles amassed during generations of diseases of the nervous system, transmitted from parent to child, which have a deteriorating influence on the psychical and moral development, diminishing the aptitude for judgment and reflection, and fostering an impulsive and unrestrained egoism.

The *Boston Medical and Surgical Journal*, in a comment on these views, says: "According to this view of the relation of crime and of criminals to the community, the proper therapeutic measures prophylactic and curative, to be applied to this disease in the body politic, the criminal is to be practically treated as an insane and irresponsible person until, by a term of discipline and orderly living, he shall have shown that he is so changed in his habits that he is fit to take his place in the world again. In fine, although science may not as yet have recognized a definite criminal type of brain peculiar to criminals, any more than to lunatics, it is nevertheless the part of wisdom for society to regard criminality as disease and treat it as such. The inveterate and incorrigible victim of this malady to be kept under restraint, where he can neither be a source of disturbance nor infection, and a suitable uplift being given to those who show evidence of radical reformation and true moral insanity. This applies most aptly to inebriety, and is an argument from the criminal side that must be recognized practically in the near future.

The prize offered by Dr. Mason, published elsewhere, is a most gratifying advance in the direction of exact study of inebriety. Most properly such a prize is open to all competitors, and the opportunity for exploration in this new field will no doubt attract many new workers in science.

Clinical Notes and Comments.

HISTORICAL SKETCH OF THE AMERICAN ASSOCIATION FOR THE CURE OF INEBRIATES.

BY JOSEPH PARISH, M.D.

No. 4.

DEAR DR. CROTHERS,— In preparing for No. 4, of "Historical Sketches," etc., I find a paper which is so remarkable as to its source, so descriptive as to the series of its matter and style, and so forcible in its appeal to the members of the association, as to constitute an essay, that as a whole is *unique*, and deserving of a place in the literature of inebriety without abridgement, and I therefore send it for the JOURNAL, with the hope that you may give it a position that shall command the attention of your numerous readers. It is entitled:

Disabilities of Inebriates.—A Communication from the Inmates of the Pennsylvania Sanitarium.

GENTLEMEN,— We are aware that in offering to you our views upon the grave subjects whose discussion has brought you together, we occupy the position of the condemned criminal, who, his case having been adjudicated, is simply *pro forma* asked what he may have to say, ere the already determined sentence be passed; and yet, we trust, in appealing to you as our advocates, we have come to those whose careful examinations, enlarged knowledge, and generous motives have enabled them to set aside hasty conclusions and common prejudices; and that, through you, we may appeal again to the bar of public opinion, with the hope of a kinder hearing and a revised judgment, which may perhaps be productive of higher good.

In common life, so intimately mingled is the vice of intemperance with some of the offenses of the professional criminals, that to most persons they are but synonyms. The one is but too often added to the crimes of the other, and appearing as they do, thus yoked, in our courts and penitentiaries, it is hardly strange that even the good and virtuous should esteem them identical. It is not necessary that we should deny this with reference to ourselves; for neither our friends, nor our worst enemies, will make against us this charge.

Doubtless, to ourselves, as well as to others, the cause of our condition is a mystery. We have all been educated with a deep respect for religious obligations, which we still retain, some of us having been church members. Some few have been accustomed to the use of alcoholic stimulants in our homes, and find ourselves victims to their power, while other members of our families, brought up under the same influences, have escaped unharmed, and are now occupying active positions in the busy world, still indulging more or less freely, and with apparent impunity, the appetite which has been *our* ruin. Some of us in our early business life were taught to believe that an open-handed liberality, and the free offer of the glass to our customers, was necessary to success. Others remember that in the pursuit of our professions, in the freedom and irresponsibility of a student's life, we were surrounded by those who joined freely in the convivialities of the drinking saloon and wine supper; and now, as we look around and ask for our quondam companions, we find a few, and they perhaps the most brilliant and beloved of our circle, conquered by our common foe; but the large majority have thrown off the wild habits of those days, and are now settled in their various homes, in successful business.

These are simple facts that startle us, as we recur to our own unenviable situation, with the question, Why? Gentlemen, we do not attempt to answer. We ask of you, our judges, to reply.

Were they upon whom the tower in Siloam fell the worst of criminals?

It is not our intention here, however, to argue the question of criminality. While we confess to our full share of human weakness and sin, and acknowledge our unfortunate dependence upon society and friends for protection and relief, we have, nevertheless, an inalienable conviction of our right to share, in common with others, the elevating influences of our Christian civilization. Has society extended to us this right? In order fairly to answer this question, we respectfully submit for your consideration the following propositions.

1. That a social ostracism is practiced towards us, which is not practiced towards other members of families or society who have vices and diseases that are equally offensive to morals and equally damaging to the community.

2. That church ostracism in many instances deprives us of the very sympathies and forces that should combine for our relief and restoration.

3. That we suffer from legal disabilities, by which offenses committed in a state of unconsciousness from intoxication, are, on this account, punished with more severity; while the same offenses committed during the unconsciousness resulting from insanity, or other diseases, are mitigated or excused on account of the same.

4. That our sorrows and sins are made texts for sermons; our symptoms and misfortunes are caricatured by lecturers and performers, and we are exposed alike to odium and ridicule; which has a most depressing and damaging effect upon our mental and moral nature, and directly predisposes to results against which we would guard.

5. That we are expected to change or overcome our constitutional tendencies, and reform our lives, under a degree of pressure from all classes of the community, such as is brought to bear upon no other class of individuals.

6. That in view of these facts, we need places of refuge, or asylums, where we may escape the depressing influences

to which we have referred, and where for a time, freed from the temptations and associations amidst which we have been led astray, we may regain that moral tone and power of will which can alone fit us for the duties and responsibilities of life.

As expressing our views upon the character and conduct of such institutions, and the modes by which they may best attain their objects, we take leave to quote the following remarks from the annual report of our president, Dr. Parish :

"Imposing public edifices, with surrounding walls and guarded gates, for the purpose of separating their inmates from the heart of the community, may be well enough for convicts or maniacs, but for men of feeble will, or perverted tastes, or depraved appetites, or exhausted energies, or depressed spirits, such imposing structures are needless.

"It is a fact which is essential to our civilization, that there are classes of persons who must be separated temporarily from the active duties of life for the common good. Inebriates constitute such a class. Their separation, however, should be as little like separation as circumstances will permit, and, therefore, the buildings which they are to occupy should be as much like their homes, or homes which men are ambitious to possess and enjoy, as possible.

"Human sympathy is a blessed messenger to the needy, even as an occasional visitor ; but when it is the presiding and ruling genius of an institution, it becomes a perpetual benediction, that does more to soothe the asperities of a disordered mind, and elevate the struggling manhood of a degraded spirit, than any other impulse or sentiment of the race.

"It cannot be found in solitude, or in isolation from normal influences. Apart from the circle of legitimate family life, and the Christian surroundings which beautify and sanctify such a life, it can only be approximated among separated and classified unfortunates, in family buildings, with a united head, a family table, and a family altar.

"But few persons are competent to appreciate the effort

it costs an inebriate to submit to the regimen of a reformatory institution ; and fewer still can fully apprehend the value of such an effort to the individual himself.

"By the practice of self-control and self-denial his moral nature and self-respect are both improved, and he realizes that he is commanding the admiration and encouragement of those who are interested in his behalf.

"There is a heroism in such voluntary struggles, which is the earnest to such men, of ultimate conquest, and they should have the unremitting aid and counsel of all good persons."

In conclusion, gentlemen, our object has not been, in this hastily prepared paper, to elaborate the propositions presented, or to point out definitely what course of action will be the wisest. To do so would require a clearness and breadth of intellectual power we do not claim, and, after all, this must be the result of long extended, practical experience. We earnestly desire that the spirit of your counsel may be just and right, and sincerely hope that through them society and government may be so led, that while relieving them of one of the most terrible evils uncontrolled appetite inflicts, the victims themselves may be gently led back to the prodigal's home ; that they, whose possession has seemingly more than equaled that of the ancient maniac of the tombs, may yet be found sitting at the feet of Divine Wisdom, clothed, and in their right minds.

Just here a word of explanation concerning the above communication will be in place. Who were these inebriates? Why did they send such a communication? Answer. They were twelve intelligent men — inebriates — who had voluntarily subjected themselves to the discipline and treatment of a sanitarium, for the purpose of recovery from their inebriety. They came not from the lower walks of life, but from mercantile pursuits, and from the professions. They were men of education, of good social positions, and of good family history, who, with the burden of a common infirmity, assembled themselves together to compare and discuss

their own frailties and difficulties. While they seemed to realize what they describe, they say: "the cause of our condition is a mystery," and in another place, "Gentlemen, we do not attempt to answer. We ask of you, our judges, to reply."

To meet such questions as this, to penetrate to the bottom of this whole subject, with the hope of discovering the remote as well as the proximate causes for inebriety and the remedies therefor, is the grand object of this association. Mr. William J. Lawrence, acting superintendent of the Washingtonian Home at Boston, follows in an excellent paper, detailing at some length his experience with different classes of intoxicated men, and after making his classification into three separate divisions, he dwells upon the state of the incorrigible, and says: "In my opinion, men of this class, with rare exceptions, should not be admitted as patients in an asylum with the other classes. I have found their influence more pernicious to others than the good example of others has been to them." He believes that there should be a separate institution, or building, for this class of demoralized and profane drunkards. Referring to enforced submission by the various means of physical restraint, he gives the following: "It is my experience that treatment that would craze a sane man will usually increase the insanity of a man already insane. I find that rational treatment is the best, even for irrational men, and, hence, I put my delirious patients in a good room, with an experienced nurse, and as the latter never disputes or controverts the vagaries of the former, there is nothing to quarrel about, and, therefore, no quarrel follows, and the patient being unmolested in his tantrums, and allowed to talk or be silent, to stand on his head or his heels, soon exhausts himself and submits to the action of medicine, which in due time puts him to sleep, simply because he has nothing near him to disturb, annoy, or keep him awake. If I was asked what are the best means for recovering a patient from a long or short debauch, I should say, a quiet room, good nursing, beef tea, and as little medicine as possible to induce

sleep. The best, and, I believe, the only agency that can effect a permanent *moral cure* is that which best succeeds in drawing out the man himself." "Public talking," "printed lectures and appeals," will not answer, and finally Mr. Lawrence says:

"In brief then, to sum up the whole theory of cure in a few words, we believe that just in that proportion in which we acknowledge the manhood and brotherhood of the inebriate, and freely award him all the rights of a fellow being, do we succeed in drawing out his inherent goodness of character, and, hence, in ultimately reforming him."

These are the utterances of a man who is not a physician, but who, from his standpoint as a reformer, displays the true spirit and working power of the moralist in his special field of labor, and such influences cannot fail to be of service in any effort to restore and redeem broken and fallen humanity.

The next topic that occupied the attention of the association was introduced by the late Dr. D. G. Dodge, at that time superintendent of the Binghamton Asylum for Inebriates. The title of his paper is "Restraint as a Remedy in the Treatment of Inebriety." I can do no more at this time than offer the text of the essay submitted by Dr. Dodge, as an indication of the line of argument pursued by him in the discussion. He says:

"To assist your patient in making a practical application of the leading and prominent remedy, *abstinence*, we contend and insist that certain *restraints* are absolutely necessary to the successful treatment of a majority of those who desire and will honestly and persistently make an effort for their recovery. At the very start it is imperative that the patient should voluntarily submit to all restraint that will keep him absolutely free from temptation." . . . "We are of the opinion that the confirmed drunkard is not able, unaided, to secure his own reformation, from the fact that he has lost all self-command." . . . "The restraint to be effectual must necessarily be rigid, at the same time it should have

as little as possible the appearance of anything that is arbitrary and tyrannical, as this class of men are tenacious of their rights and privileges. We should never trifle with their feelings, and avoid wounding their pride," etc. The lay reader can readily anticipate the line of argument that is to follow such premises, while the physician may discover in Dr. Dodge's views of the pathology of inebriety medical reasons for pursuing the same course. The poisoning influence of alcohol in degenerating the quality of the blood, in paralyzing nerve tissue, and in the failure of muscular power, caused by exhausted cerebral functions,—all these, according to Dr. Dodge, so degenerating and enervating the will power, increase the demand for physical restraint, in order that the patient may have the full benefit of the remedies that are employed.

I have now more than occupied the space allotted to me, and will draw No. 4 to a close.

TO MEDICAL MICROSCOPISTS.

In behalf of "the American Association for the Study and Cure of Inebriety" the sum of one hundred dollars is offered by Dr. L. D. Mason, vice-president of the society, for the best original essay on "The Pathological Lesions of Chronic Alcoholism Capable of Microscopic Demonstration."

The essay is to be accompanied by carefully prepared microscopic slides, which are to demonstrate clearly and satisfactorily the pathological conditions which the essay considers.

Conclusions resulting from experiments on animals will be admissible. Accurate drawings or micro-photographs of the slides are desired.

The essay, microscopic slides, drawings, or micro-photographs are to be marked with a private motto or legend and sent to the chairman of the committee on or before October 1, 1890.

The object of the essay will be to demonstrate: *First*, Are there pathological lesions due to chronic alcoholism?

Secondly, Are these lesions peculiar or not to chronic alcoholism?

The microscopic specimens should be accompanied by an authentic alcoholic history, and other complications, as syphilis, should be excluded.

The successful author will be promptly notified of his success, and asked to read and demonstrate his essay personally or by proxy, at a regular or special meeting of the "Medical Microscopical Society," of Brooklyn. The essay will then be published in the ensuing number of *THE JOURNAL OF INEBRIETY* (T. D. Crothers, Hartford, Conn.), as the prize essay, and then returned to the author for further publication or such use as he may desire. The following gentlemen have consented to act as a committee:

Chairman—W. H. BATES, M.D., F.R.M.S., London, Eng.,
(President Medical Microscopical Society, Brooklyn.)

175 Renssen Street, Brooklyn, N. Y.

JOHN E. WEEKS, M.D.,

43 West 18th Street, New York.

RICHMOND LENNOX, M.D.,

164 Montague Street, Brooklyn, N. Y.

SOME PRIVATE ASYLUMS AND HOMES.

It is of interest to know some of the best places in the country where the mildly insane and the neurotics of all classes can find the best care and treatment. The places advertised in the *JOURNAL* are personally known to be all that is claimed for them, and in many respects are the most complete hospitals in the world for the class they treat.

The *Green Spring Sanitarium*, of Ohio, under the care of Dr. Marshall, is a beautiful home, near a valuable mineral spring, the waters of which are most excellent remedies and used for both drinking and bathing.

Kensett on the Sound, forty miles from New York city, on the Connecticut shores, near Rowayton, is practically a sea-side asylum. Dr. Smith, who has had long experience in the

treatment of all mental diseases, has charge. This is one of the very few seaside asylums for nervous cases, and is very popular.

At Baldwinsville, Mass., in a charming country place, Dr. Baker has a private home, with most excellent facilities for the rest, treatment, and means to suit every case.

Dr. Mattison, of Brooklyn, N. Y., the veteran specialist of opium inebriety, has his home constantly crowded with patients.

Homewood Retreat, of Guelph, Canada, under the care of Dr. Lett, is one of the most complete private asylums in Canada. The buildings, surroundings, and skill of its management, commend it to every one.

The veteran Dr. Parish, with over half a century of experience, still presides over an elegant home for neurotics at Burlington, N. J.

The *Highlands* is the name of an asylum at Winchendon, Mass., in charge of Dr. Russell. In the midst of beautiful mountain scenery, the management have combined all that is most excellent in the best asylums of the world in a family home. The success of this effort shows the skill of its physicians and the completeness of the surroundings in this new advance in psychiatry.

Dr. Ring, at Arlington Heights, near Boston, Mass., has charge of a palace-like home, where every surrounding of wealth and culture can be combined in the treatment of all these varied neurotic cases.

The *Battle Creek Sanitarium* is the largest hospital for invalids of all kinds in the world. Dr. Kellogg, the superintendent, is a thorough scientific man, and very widely known all over the west.

Washingtonian Home, of Boston, Mass., is one of the oldest asylums for inebriates in the world. The superintendent, Dr. Day, has treated more inebriates than any other physician living.

Inebriates Home, Fort Hamilton, N. Y., is one of the best equipped asylums for inebriates in this country. Under the charge of Dr. Blanchard it has taken high rank among the great pioneer asylums of the world.

Lake View Retreat, on Lake Champlain, at Burlington, Vt., under the charge of Dr. Clark, has been a very popular private asylum for years. It is a most beautiful mountain home for nervous invalids.

Walnut Lodge, at Hartford, Conn., only receives cases of alcoholic and opium inebriety. It is one of the few places where Turkish baths are used as a special remedy.

Lactopeptine has a peculiar value in disorders of the brain and nervous systems, by correcting the nutritive disturbances, giving new force and vigor to the organism.

The *London Essence of Beef* is concentrated beef juice. Unlike beef tea it has a peculiar value which can be obtained in no other form. This preparation should be used in all cases of brain and nerve disease.

Battle & Co. of St. Louis, Mo., have for years prepared the famous *Bromidia* and *Papine* that have come to be standards in the market.

Fellows' Hypophosphites is a combination of rare value, which has won a permanent place as a brain remedy. It is very largely used in inebriate hospitals.

Lactated Food, prepared by Wells, Richardson & Co., of Burlington, Vt., is a standard remedy for invalids, and has practically no rival in the market to-day.

Parke Davis' Cascara-Sagrada is one of the best preparations for the bowels on the market. All the preparations of this firm are excellent.

Warner's Bromo-Potash is practically a most excellent remedy for inebriety, also for the immediate effects of excessive drinking. Every hospital should try this preparation.

Hosford Acid Phosphate still holds its place, unrivaled in the market, as a tonic for both brain and nerves.

Robinson's Elixir Paraldehyde is a most excellent hypnotic in inebriety, from both alcohol and opium. It should be used in all these cases.

The *Maltine* is without a rival as a tonic in all cases of brain and nerve debility.

Peptonized Cod liver Oil and milk with lime and soda is invaluable in many cases.

London Essence of Beef

(LIQUID).

Not for making Beef Tea.

Pure expressed Beef Juice, concentrated. Nothing more, nothing less. We use only fine beef. Come to our factory—any time. See for yourself.

For twenty-five years past—and now more than ever—Essence of Beef has been used in the Hospitals and by the Physicians of Great Britain. See Pavy "Food and Dietetics," London, 1874, pp. 450 and 515.

Useful in all Diseases of the Intestines and Stomach.

Nourishing in Marasmus.

Stimulating in Cases of Prostration.

Strength Supporting in Wasting Diseases.

Physical characteristics. A heavy amber liquid. Delicate in flavor. When placed on ice becomes a jelly. Administered in that form, is grateful and refreshing in fevers. Is taken just as it is from the can. No further preparation needed.

Not for making beef tea. Don't confound with it.

The stomach retains Essence when rejecting all else.

NOTE.—Add a teaspoonful of Essence to each pint of babies' food; it will prevent intestinal disorders.

In 4-oz. tins, 50 cents.

All druggists don't sell it. Many do. Any can get it.

Gaunt & Janvier New York

ROBINSON'S ELIXIR * PARALDEHYD.

HYPNOTIC, SEDATIVE, ANODYNE.

Paraldehyd $C_6 H_{12} O_3$ is a therapeutical agent which has been in use for the past few years only. It is formed by the action of mineral acids upon Aldehyd, $C_2 H_4 O$.

"In doses of 45 grains it is said to calm restlessness and insomnia, and procure unbroken sleep of from 4 to 7 hours' duration, and to leave behind neither languor, nausea, nor digestive disorders. It also acts as a diuretic. It has been found efficient in the INSOMNIA of various acute diseases, and also in acute MANIA and the excited paroxysms of chronic insanity and dementia. It is proposed as possessing the good without the evil qualities of chloral. (Nat. Dis., 3d Edit., p. 151.)"

It is also claimed to be a valuable *antidote* to *Strychnine*.

In Delirium Tremens and Morphiomania it has been used with good results.

Our Elixir contains forty-five grains of the Paraldehyd in each fluidounce, dissolved in an aromatic menstruum, whereby the objectionable taste of the Chemical is, to a great extent, disguised, and the preparation rendered palatable.

DOSE—2 to 8 fluidrachms.

Pint Bottles, Retail Price, \$1.50.

Physicians are respectfully requested to specify "ROBINSON'S"

PREPARED BY

R. A. ROBINSON & Co.

Manufacturing Pharmacists,

ESTABLISHED 1842.

LOUISVILLE, KY.

MANUFACTURERS ALSO OF

ROBINSON'S HYPOPHOSPHITES,

ROBINSON'S LIME JUICE AND PEPSIN,

ROBINSON'S WINE COCA,

ROBINSON'S PHOSPHORIC ELIXIR,

ROBINSON'S COLORLESS HYDRASTIS,

ROBINSON'S FLUID EXTRACTS, ETC.

FOR SALE BY DRUGGISTS.

THE HIGHLANDS.

A FAMILY HOME FOR NERVOUS AND MENTAL DISEASES.

WINCHENDON, MASS.

This "Family Home" is conducted by Dr. Ira Russell and Dr. Frederick W. Russell, both of whom have made the study and treatment of mental and nervous diseases, physical and nervous exhaustion, opium and alcoholic inebriety a specialty. The Home is not an institution or asylum. It is to all intents and purposes a "Family Home," where everything is made as homelike as possible. Patients are not subjected to the care of common nurses, but are provided with companions. Intelligent gentlemen are employed as attendants and companions of the male patients, and educated American women of experience are the attendants and companions of the lady patients.

The feeling of social degradation that is commonly felt by patients in Retreats and Public Institutions, who are subjected to the control of uncultivated nurses, is not experienced here. The utmost possible liberty is permitted, under suitable guardianship, to all the patients, and each one is regarded and treated as a member of a private family. Each case receives the attention and study given to private practice, and when needed the ablest medical talent in the country is called into consultation.

The Highlands, so called, is a pleasant mansion with cottages annexed, situated in the midst of ample grounds, on an eminence overlooking the town of Winchendon and the valley of Millers River. From the windows a superb range of hills and mountains can be seen, reaching from Wachusett in the southeast to Monadnock in the northwest.

A piano room, billiard room, bowling saloon, and ample stabling are provided on the grounds. The drives in the vicinity are considered delightful, and for healthfulness of location the Highlands are unsurpassed.

Dr. Ira Russell is the founder and superintendent of the Home, and letters of inquiry can be addressed to him, or to Dr. F. W. Russell, the assistant superintendent. For information we are permitted to refer to the following gentlemen:

- | | |
|---|---|
| C. F. Folsom, M. D., Prof. Mental Disease,
Harvard College, 15 Marlboro St., Boston. | G. F. Jelly, M. D., 123 Boylston St., Boston. |
| W. C. Williamson, Esq., 1 Pemberton Sq.,
Boston. | C. H. Hughes, M. D., editor of <i>Alienist and
Neurologist</i> , St. Louis, Mo. |
| J. H. Hardy, Esq., 23 Court St., Boston. | E. C. Spitzka, 130 E. 50th St., New York, N. Y. |
| Rev. G. J. Magill, D. D., Newport, R. I. | W. W. Godding, Superintendent National In-
sane Asylum, Washington, D. C. |
| Wm. A. Hammond, M. D., 43 West 54th St.,
New York. | Clark Bell, Esq., editor of the <i>Medico-Legal
Journal</i> , New York City. |
| S. G. Webber, M. D., 133 Boylston St., Bost'n. | T. D. Crothers, M. D., Hartford, Conn. |



PRESIDENT CLEVELAND'S PRIZE

for the three best babies at the Aurora County Fair, in 1887, was given to these triplets, Mollie, Ida and Ray, children of Mrs. A. K. Dart, Hamburg, New York. She writes: "Last August the little ones became very sick, and as I could get no other food that would agree with them, I commenced the use of Lactated Food. It helped them immediately, and they were soon as well as ever, and I consider it very largely due to the Food that they are now so well."

LACTATED FOOD.

**SUGAR OF MILK
THE BASIS.**

No Cane Sugar.
Free from Starch.
Highest Value in Nutrients.
Easily Assimilated.

A regular size package of Lactated Food will be sent, charges paid, to any physician who is not yet acquainted with its merits. Correspondence solicited.

WELLS & RICHARDSON CO., Burlington, Vt.

DR. KING'S HYGIENIC INSTITUTE.

A family Home for 12 select patients only, for the treatment of diseases of the nervous system generally, Alcohol, Opium habits, Chronic Rheumatism, Asthma, Bronchitis, Dyspepsia, and diseases incident to women.

After an experience of over twenty years the Doctor has been fully convinced that the most of the diseases embraced within the above-named classes can be managed and treated far more successfully in a Private Home under the constant care of a physician, assisted by competent nurses, electricity, medicated baths, douches, massage, inhalation, and hygienic diet.

This attractive and popular health resort is situated on the Palisades on the bank of the Hudson River, fifteen miles north of New York City. The grounds connected with the Institute comprise twenty-five acres of lawn, garden, field, and natural forest of variegated surface and fine groves of evergreen, and deciduous trees which render the place attractive at all seasons of the year.

For particulars address

B. W. KING, M. D.,
ALPINE, NEW JERSEY.

HOME FOR HABITUÉS.

Opium. Chloral. Cocaine.

DR. MATTISON

continues to receive at his residence,

314 STATE STREET, - - BROOKLYN, N. Y.,

a limited number of OPIUM HABITUÉS, also, CHLORAL and COCAINE cases, to whom he devotes his *exclusive* professional attention. Patients, six, and select. No alcoholics. Attractive apartments, liberal cuisine, desirable privacy, cheerful society, and *personal* professional attention, based upon several year's experience in the treatment of this disease. Details at command.

DR. ALLAN MOTT-RING

will receive a limited number of cases of *Nervous Disease* in either sex at his Institution, Arlington Heights, Mass., eight miles from Boston. A few cases of *Mental Disease* and patients afflicted with *Dipsomania*, and the *Opium Habit* are cared for in a Sunny Cottage adjacent to the main building.

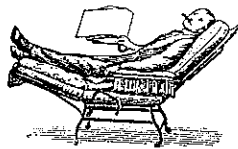
No institution of which we have knowledge is so well located or so well adapted for the class of patients we treat as this Home. The rooms are large, airy, most of them sunny, well furnished and lighted by gas, and heated by steam. The Music Room and Parlors are large and cheerful. The treatment and Bath-rooms are the largest and most complete of any private institution in the country, and the Turkish, Electric, and Miscellaneous Bath-rooms are fitted with all modern appliances. The Gymnasium 30 X 30 is well equipped.

Everything is done to give the institution a homelike atmosphere, and there is almost an entire absence of the hospital, asylum, or invalid air about it. While enjoying all the advantages of being near Boston, which it overlooks, it is sufficiently distant and so situated as to afford the privacy and quietness of a private residence. For particulars, address

ALLAN MOTT-RING, M.D., *Medical Superintendent.*

AN ELEGANT PRESENT.

THE MARKS ADJUSTABLE CHAIR.



Look on this picture of solid comfort and go at once to
930 BROADWAY

and purchase one for your father, mother, brother, sister, sweetheart, or dearest friend. Think of a chair with 50 changes of position which will form a Parlor, Library, Reclining, or Invalid Chair, Lounge, Full-length Bed or Child's Crib.

IT MUST BE SEEN TO BE APPRECIATED!

MARKS CHAIR COMPANY.

920 BROADWAY, 21st and 22d Sts.

THE PRIVATE INSTITUTION FOR FEEBLE-MINDED YOUTH, AT BARRE, MASS.,

ESTABLISHED JUNE, 1848.

Offers to parents and guardians superior facilities for the education and improvement of this class of persons, and the comforts of an elegant country home.

GEORGE BROWN, M.D., *Superintendent.*

N.W. AYER & SON ADVERTISING AGENTS

**TIMES
BUILDING PHILADELPHIA**

Cor. Chestnut and Eighth Sts.

Receive Advertisements for this Paper.

ESTIMATES For NEWSPAPER ADVERTISING
at Lowest Cash Rates FREE

Send 10c. in
stamps for
AYER & SON'S MANUAL

— THE —

CHICAGO MEDICAL JOURNAL AND EXAMINER.

EDITORS:

S. J. JONES, M.D., LL.D. W. W. JAGGARD, A.M., M.D. H. N. MOYER, M.D.

A Monthly Medical Journal, 52d Volume.

SUBSCRIBE FOR IT. \$3.00 PER ANNUM.

THE JOURNAL AND EXAMINER contains NINETY-SIX PAGES of reading matter, exclusive of advertisements, and is issued on the first of each month.

The matter consists of Original Articles from the pens of some of the best known members of the Profession, Foreign and Domestic Correspondence, Reports of Societies and Associations, Reviews and Editorials, Items of interest to Physicians.

Send in your Subscriptions now and we will send you back numbers to make present volume complete without extra charge.

Advertising Rates or Specimen Copies sent upon Application.

SUBSCRIBE NOW. \$3.00 PER ANNUM.

Address

CLARK & LONGLEY, Pub's,

163 & 165 Dearborn Street, - - CHICAGO, ILL.



FREE Sewing-Machine
 To at once establish
 trade in all parts, by
 placing our machines
 and goods where the people can see
 them, we will send **free** to one
 person in each locality, the very
 best sewing-machine made in
 the world, with all the attachments.
 We will also send **free** a complete
 line of our costly and valuable art
 samples. In return we ask that you
 show what we send, to those who
 may call at your home, and after 3
 months all shall become your own
 property. This grand machine is
 made after the Singer patents,
 which have run out before patents
 run out it sold for \$43, with the
 attachments, and now sells for
 \$50. Best, strongest, most use-
 ful machine in the world. All is
 free. No capital required. Plain,
 brief instructions given. Those who write to us at once can se-
 cure free the best sewing-machine in the world, and the
 finest line of works of high art ever shown together in America.
TRUE & CO., Box 740, Augusta, Maine.

THE MEDICO-LEGAL JOURNAL,

A QUARTERLY DEVOTED TO THE SCIENCE OF MEDICAL JURISPRUDENCE,
Published under the Auspices of the Medico-Legal Society of the City of New York.

This Journal will publish the leading papers of the Medico-Legal Society, and a resume of its transactions. Its columns will at the same time be open to contributions from all sources and from all parts of the world, on appropriate subjects and questions. It will endeavor to chronicle interesting facts and scientific deductions within its domain, and keep a record of current events, especially in the trial of cases in the courts which involve Medico-Legal questions.

The Price of the Medico-Legal Journal has been fixed at \$3.00 per annum, in the hope and with the expectation of its receiving a generous support from all classes of intelligent readers. Every branch and department of Medico-Legal Science will be carefully represented, and assurances have been received from the ablest professional names in Law and Medicine of efficient aid and support by way of contributions to these columns. It will be found to be of interest to every lawyer and physician, and full of profit to the general reader.

SUBSCRIPTIONS may be made to any officer of the Medico-Legal Society, or to CLARK BELL, Esq., Editor, 57 Broadway, New York, of whom specimen copies can be obtained on application, at 40 cents each.

MEDICO-LEGAL PAPERS. 'SERIES 3.

This is a volume of 530 pages, issued by the Medico-Legal Society of New York, containing certain of the papers read before that Society, from January 1, 1875. It contains papers and articles by Dr. A. O. Kellogg, Mr. Clark Bell, Mr. R. S. Guernsey, Dr. George M. Beard, Dr. J. J. O'Dea, Mr. Morris Ellinger, Mr. Jacob F. Miller, and many others.

It has portraits of Mr. Clark Bell, Judge Charles P. Daly, Wm. G. Davies, Dr. Beck, Dr. R. Swayne Taylor, E. W. Stoughton, Geo. M. Beard, M. D., Dr. Connolly, Judge Beach, and others.

Price, Cloth, \$3.50.

Paper, \$2.50.

Address the Publisher,

LEON P. KUHL,

or CLARK BELL,

No. 817 Broadway, N. Y.

No. 57 Broadway, N. Y.

HOMEWOOD RETREAT, Guelph, Ont., Canada.

JOSEPH WORKMAN, M.D.,

Consulting Physician.

STEPHEN LETT, M.D.,

Medical Superintendent.

A PRIVATE ASYLUM FOR THE CARE AND TREATMENT OF THE
INSANE, INEBRIATES, AND THE OPIUM HABIT.

This admirably appointed and salubriously situated retreat, whilst possessing all the advantages of a larger institution, enjoys the privacy and quietness of a gentleman's residence.

THERE ARE A FEW VACANCIES FOR BOTH MALE AND FEMALE PATIENTS.

FOR PARTICULARS ADDRESS,

DR. LETT,

GUELPH, ONT.

MALTINE.



MALTINE is far superior in nutritive and diastatic value to any Malt Extract manufactured in the world. There is no reconstructive that excels Maltine in Phthisis and many wasting Diseases.

MALTINE, in its different forms, is the only Malt Preparation we now employ, being so palatable, digestible, and easily assimilated. Of its efficiency in appropriate cases there is no more doubt in our minds than there is of the curative power of Quinine, Cod Liver Oil, the Bromides, and the Iodides.

It deserves to stand in the front rank of constructives; and the constructives, by their preventive, corrective, and curative power, are probably the most widely useful therapeutical agents that we possess.

Prof. L. P. YANDELL.

MALTINE is a valuable food, a food of priceless value at times of emergency. In fact, in very grave gastric cases, it is a food which may often be resorted to when at one's wits end what to do.

J. MILNER FOTHERGILL.

Out of 14 trade samples of Malt Extract examined by Messrs. Dunstan & Dimmock, only three possessed the power of acting on starch. These brands were **MALTINE**, Corbyn, Stacey & Co.'s Extract, and Keppler's Malt Extract.

WILLIAM ROBERTS, M.D., F.R.S.

I have subjected "**Maltine**" and "**Trommer's Extract of Malt**" to an exact quantitative comparison of their diastatic activity.

The results demonstrate conclusively the far greater diastatic value of **Maltine**, and enable me to state, without any qualification whatever, that it far exceeds in diastatic power any of the six preparations of Malt which I have examined.

R. H. CHITTENDEN,

Professor of Physiological Chemistry in Yale College,

At the International Health Exhibition held in London, England, the only gold medal and the highest award of merit were given to **Maltine** by a jury composed of the best chemists in Europe; and recent analyses made by the most reliable authorities in Europe and America prove conclusively that **Maltine**—in nutritive and diastatic value—is superior to all other Malt preparations now in the market.

NOTE.—Physicians will observe that **Maltine**, as now prepared, is not so viscid as formerly made, being of a more fluid consistency; and, while retaining the nutritive and diastatic value, which has given it precedence over all other Extracts of Malt, it is rendered entirely agreeable to the taste of the most fastidious, and is more easily administered. As now prepared we positively guarantee that **Maltine** will not ferment or congeal in any climate or at any season of the year.

COMPLETE LIST OF MALTINE PREPARATIONS.

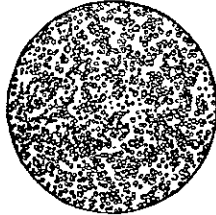
- | | |
|--------------------------------------|---|
| MALTINE (Plain) | MALTINE with Phosphates, Iron, Quinia, and Strychnia. |
| MALTINE with Alteratives. | MALTINE Ferrated. |
| MALTINE with Cod Liver Oil. | MALTO-YERBINE. |
| MALTINE with Hypophosphites. | MALTO-VIBURNIN. |
| MALTINE with Peptones. | MALTINE with Cascara Sagrada. |
| MALTINE with Pepsin and Pancreatine. | |

Send for Pamphlet giving comparative analyses by twenty of the best Analytical Chemists in this country and Europe.

We will be happy to supply any regular practitioner with eight ounces each of any three **Maltine** Compounds that may be selected from our list, providing he will agree to pay express charges on same.

THE MALTINE MANUFACTURING CO.,
 LABORATORY, Yonkers-on-Hudson. 182 FULTON ST., N. Y.

Peptonized Cod Liver Oil and Milk.

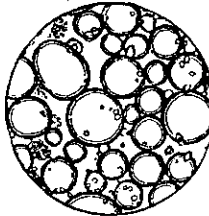


**Peptonized
Cod Liver Oil and Milk**
200 Diameters.

The finest division of
oil globules reached
in any emulsion
or preparation
of Cod Liver
Oil.

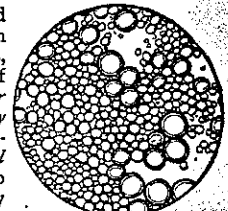


Cow's Milk.
200 Diameters.



*** No. 1.**
200 Diameters.

All preparations of Cod Liver Oil, but the plain, in the market, are Emulsions, in some form, regardless of the names given them. *Their value and easy digestibility over the plain Oil must consist in the division of the oil globules.* Any physician who has a microscope of any power can compare COD LIVER OIL AND MILK with the various preparations of



*** No. 2.**
200 Diameters.

Cod Liver Oil, and he will find that the oil globules of COD LIVER OIL AND MILK are from 10 to 100 times finer than any preparation of Cod Liver Oil in the market, and 25 per cent. finer than in nature's Emulsion, milk. This should be the guide in the use of Cod Liver Oil with every practitioner.

Messrs. REED & CARNRICK, New York City.—Dear Sirs: I have examined your PEPTONIZED COD LIVER OIL AND MILK microscopically, with the following results: This preparation shows extremely minute oil globules suspended in a clear solution. The mean diameter of these globules is rather less than 0.003 m.m. (about 1-8000 inch), and the largest are not over 0.006 m.m. (about 1-4000 inch). For comparison it may be stated that their average diameter is from one-third to one-half that of the red blood corpuscles. *These photomicrographs show their size as compared to milk, and Emulsions of cod liver oil in the market. They have all been photographed under exactly the same conditions. In some of the specimens, the globules, when spread out in a very thin layer, gather in clusters, giving an uneven field, but not affecting their size.* Very truly yours, JAMES R. DUGAN, M. D., Ph. D.
Feb. 26, 1885. Fellow in the Johns Hopkins University, Sec'y Baltimore Microscopists' Society.

ANALYSIS OF PEPTONIZED COD LIVER OIL AND MILK, by Prof. ATTFIELD Ph. D., F. C. S., Etc., author of a Manual of General Medicine and Pharmaceutical Society.

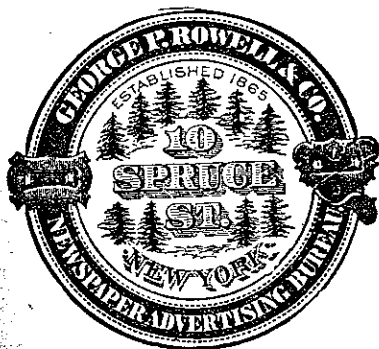
I have analyzed PEPTONIZED COD LIVER OIL AND MILK, and find that it is exactly what the makers state it to be. The sample submitted to me has all the properties of a specimen prepared by myself except that their machinery has produced a more perfect emulsion than my hand labor can effect. Indeed, I find by aid of the microscope, that as regards perfection of emulsion—that is, admixture of a fatty with a non-fatty fluid—the oil in PEPTONIZED COD LIVER AND MILK is in a finer state of division than the butter is in ordinary milk.

(Signed) JOHN ATTFIELD.

Peptonized Cod Liver Oil and Milk is also combined with Hypophosphites of Lime and Soda.

* Of the preparations of Oil on the market No. 1 contained the largest and No. 2 the smallest oil globules next to Peptonized Cod Liver Oil and Milk, in comparison with all the other preparations of Cod Liver Oil in the market.

Samples sent on application by **REED & CARNRICK,**
6 HARRISON ST., NEW YORK.



A FREE COPY
OF THE
AMERICAN NEWSPAPER DIRECTORY,
WILL BE SENT,
CARRIAGE PAID,
TO
ANY PERSON
WHO IS
A PATRON
OF
GEO. P. ROWELL & CO'S
NEWSPAPER ADVERTISING BUREAU
TO THE AMOUNT OF
FIFTY DOLLARS.

Geo. P. Rowell & Co. have just issued a new edition (the 165th) of their Book called "Newspaper Advertising." It has 272 pages, and among its contents may be named the following Lists and Catalogues of Newspapers:

DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.

DAILY NEWSPAPERS IN CITIES HAVING more than 150,000 population, omitting all but the best.

DAILY NEWSPAPERS IN CITIES HAVING MORE than 20,000 population, omitting all but the best.

A SMALL LIST OF NEWSPAPERS IN which to Advertise every section of the country; being a choice selection made up with great care, guided by long experience.

ONE NEWSPAPER IN A STATE. The best one for an Advertiser to use if he will use but one.

BARGAINS IN ADVERTISING IN DAILY Newspapers in many principal cities and towns, a List which offers peculiar inducements to some Advertisers.

LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.

THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat

SELECT LIST OF LOCAL NEWSPAPERS, in which Advertisements are inserted at half price.

5,472 VILLAGE NEWSPAPERS in which Advertisements are inserted for \$41.40 a line, and appear in the whole lot one half of all the American Weeklies.

A copy of this book will be sent free by mail to any address on receipt of THIRTY CENTS

HOW SHALL I PROVIDE

MYSELF AND WIFE and children a little sure accessible knowledge of everything; so that neither I nor they need ever content ourselves with ignorance of any thing, but rather refer to a book and find there what we want to know, as we look for a word in a dictionary?

"We shall like to be able to know a little something about whatever subject comes up. Is there a handy book of knowledge, a book with the same relation to facts that a dictionary has to words? It has got to be easy and handy and quick, or I shouldn't use it. Of course it can only give the outlines; make us intelligent, not expert. How much there is to know!"

Such a book is the International Cyclopaedia. There are several cyclopedias. Some are better adapted to general use than others. The International is the latest, therefore, of course, the most correct, explains the largest number of subjects (49,649), and treats very many of the subjects from both the English and American points of view.

Although it is the most comprehensive, it costs less than any other of anywhere nearly equal rank (\$3.00 a volume), and is sold on an easy payment plan. Full information by letter.

First-rate agents wanted, not necessarily experienced. The sale is very ready, and has scarcely more than begun. We know of no equal opportunity for a man out of business. Inquiries promptly answered.

Address JAMES I. BOLLES, General Agent,

Care of DODD, MEAD & CO., Publishers,

753 and 755 BROADWAY,

NEW YORK.

"HOME EXERCISER"

For Brain-Workers and Sedentary People.



Gentlemen, Ladies, and Youths; the Athlete or Invalid. A complete gymnasium. Takes up but 6 inches square floor-room; something new, scientific, durable, comprehensive, cheap. Send for circular. "HOME SCHOOL FOR PHYSICAL CULTURE," 16 East 14th Street, N. Y. City. Prof. D. L. DOWD.

Wm. Blakie, author of "How to get Strong," says of it: "I never saw any other that I liked half as well."



For 1888 is better than ever, and should be in the hands of every person contemplating buying PLANTS or BULBS. It contains 3 Colored Plates, thousands of Illustrations, and nearly 150 pages, telling what to buy, and where to get it, and naming lowest prices for honest goods. Price of GUIDE only 10 cents, including a certificate good for 10 cents worth of Seeds.

JAMES VICK, SEEDSMAN, Rochester, N. Y.

A PRIVATE HOME FOR NERVOUS INVALIDS.

— AT BURLINGTON, - NEW JERSEY,

By JOSEPH PARRISH, M.D.

THE HOME is for the care and treatment of persons who suffer from such morbid conditions as result from physical or mental strain and worry. For those, who, by self-indulgence and the unauthorized use of drugs, have impaired the powers of thought and will, and contracted habits for which special treatment is required. Sometimes symptoms appear which threaten serious mind-troubles, or it may be that during convalescence from mild mental disturbance, or from acute sickness, it is a decided advantage to remove patients from home. They do not need an Asylum or public Hospital life, but they do need change of scene, of environment, and social influences where, with the privacy and freedom of a home they may have the care and oversight of physicians who apply themselves especially to the study and treatment of such cases.

APARTMENTS.— Large, well furnished, convenient, and cheerful.

BATHS.— Russian or Vapor, Medicated, and Electric.

NUMBER OF PATIENTS.— Limited to seven.

For further information address

JOSEPH PARRISH, M.D.,
BURLINGTON, NEW JERSEY, U. S. A.

IT is a growing conviction, notwithstanding the large number of fountain pens, stylographs, and similar writing devices, the majority of which are but vanity and vexation of spirit, that nothing has yet supplanted the old fashioned lead pencil in efficiency and reliability. The efficiency of the lead pencil, however, depends very much upon the care bestowed in its manufacture, the quality of the materials used, and the attention given to the proper grading of the leads. It is our pleasure to say that

Dixon's "American Graphite" Pencils,

MADE BY THE

Jos. Dixon Crucible Co., Jersey City, N. J.,

fill all the requirements of a perfect pencil. The workmanship is unexcelled throughout, the wood is soft and easily cut, the leads are tough and smooth and free from grit, and the 10 degrees of hardness in which they are made permits the selecting of a pencil just suited to the work required of it.

BRIGGS PIANOS.

UNIVERSALLY ADMIRER. ENDORSED BY MUSICIANS AND CRITICS.

Send for "Latest" Edition of Catalogue.

C. C. BRIGGS & CO.,

5 APPLETON STREET, - - - BOSTON, MASS., U. S. A.

THE HUMBOLDT LIBRARY OF POPULAR SCIENCE.

Price 15 Cents Per Number.

To Subscribers, One Year (12 Numbers), - - - - \$1.50

This LIBRARY comprises many of the best popular scientific treatises of the day. The works are well printed, on good paper, in convenient octavo form—the size of the *North American Review*. Seventy-six numbers have already (January, 1886) been published. Write for a Descriptive Catalogue to the Publisher.

J. FITZGERALD, 393 Pearl St., New York City.

SCIENTIFIC AMERICAN

ESTABLISHED 1845.

Is the oldest and most popular scientific and mechanical paper published and has the largest circulation of any paper of its class in the world. Fully illustrated. Best class of Wood Engravings. Published weekly. Send for specimen copy. Price \$3 a year. Four months' trial, \$1. MUNN & CO., PUBLISHERS, 361 Broadway, N. Y.

ARCHITECTS & BUILDERS

Edition of Scientific American.

A great success. Each issue contains colored lithographic plates of country and city residences or public buildings. Numerous engravings and full plans and specifications for the use of such as contemplate building. Price \$2.50 a year, 25 cts. a copy. MUNN & CO., PUBLISHERS.

PATENTS may be secured by applying to MUNN & CO., who have had over 40 years' experience and have made over 100,000 applications for American and Foreign patents. Send for Handbook. Correspondence strictly confidential.

TRADE MARKS.

In case your mark is not registered in the Patent Office, apply to MUNN & CO., and procure immediate protection. Send for Handbook.

COPYRIGHTS for books, charts, maps, etc., quickly procured. Address

MUNN & CO., Patent Solicitors.

GENERAL OFFICE: 361 BROADWAY, N. Y

ARCHIVES OF PEDIATRICS.

A MONTHLY JOURNAL

— DEVOTED TO THE DISEASES OF INFANTS AND CHILDREN. —

Subscription Price \$3.00 per Year.

The publishers take pleasure in announcing that, in addition to the regular contributions, the following valuable series of scientific articles will be published in the ARCHIVES OF PEDIATRICS during 1888:

I. THERAPEUTICS OF INFANCY AND CHILDHOOD,

by A. Jacobi, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, President of the New York Academy of Medicine, etc.

The plan and scope of these articles are given in the following extract from Prof. Jacobi's letter to our editor:

"I will prepare an essay of ten or twelve pages for every monthly issue of your journal. The subjects will be therapeutical. The first paper will probably contain general principles in their application to the disorders of early age. The following will treat of the therapeutics of the diseases of the newly-born, of developmental and infectious diseases, those of the organs of circulation and respiration, genito-urinary organs, stomach, and other abdominal viscera, muscles and bones, skin, nervous system, etc. Other subjects which will be treated of afterwards are certain classes of remedies, such as anæsthetics, narcotics, anti-febriles, purgatives, absorbents, roborants, stimulants, etc. If there be time and room, the most interesting diseases, such as epilepsy, chorea, whooping-cough, and growths, may become the subjects of special papers."

Begin in January, and run through the Year.

II. THE SYPHILITIC AND GENITO-URINARY DISEASES OF INFANTS AND YOUNG CHILDREN,

by F. R. STURGIS, M.D., Professor of Venereal and Genito-Urinary Diseases in the New York Post-Graduate Medical School and Hospital, etc.

These articles will cover the following, especially, viz.:

1. General considerations of syphilis in children and the methods by which it may be acquired.
2. Lesions of the skin and mucous membranes in syphilitic children.
3. Lesions of the bones, viscera, and nervous system in syphilitic children.
4. Affections of the eye, ear, and teeth in syphilitic children.
5. Treatment of infantile syphilis and its sequelæ.
6. Diseases of the bladder and urethra in children.
7. Functional disorders of the genito-urinary organs.
8. Medico-legal aspects of venereal diseases in children.

Begin in January and run to August.

III. THE MEDICAL DISEASES OF THE MOUTH IN CHILDREN,

by F. FORCHHEIMER, M.D., Professor of Diseases of Children in the Medical College of Ohio, at Cincinnati.

Begin in September and run through the Year.

J. B. LIPPINCOTT COMPANY, Publishers,

715 and 717 Market Street, Philadelphia.

WASHINGTONIAN HOME,

No. 41 Waltham Street,

BOSTON, MASS.

This Institution is the first of its kind ever formed for the treatment and cure of Intemperance, and was instituted in 1857, and incorporated in 1859.

Up to January, 1884, nearly EIGHT THOUSAND PATIENTS have been treated, and while many have been entirely and permanently cured, all have been more or less benefited and improved.

The elegant and commodious building recently erected at

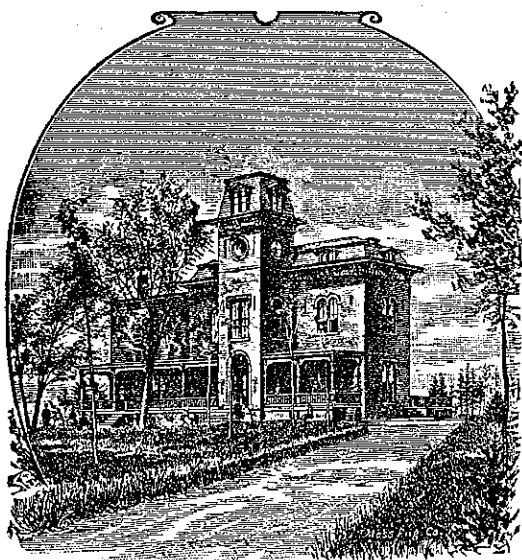
No. 41 Waltham Street,

A few steps from Washington Street, embraces every modern improvement, and will pleasantly accommodate from forty to fifty patients.

Any man who honestly desires to reform his intemperate habits will find at this establishment every aid and accessory that science, sympathy, and long experience can possibly bring to his relief; and while under treatment, which is simple and pleasant, will at the same time be surrounded with all the comforts of home, and strengthened by congenial associations and agreeable entertainment.

The charges for board, etc., will be moderate—not to exceed the price paid for similar accommodations in any private family. For further particulars, reports, circulars, methods of treatment, etc., address or apply to

ALBERT DAY, M.D.,
SUPERINTENDENT AND PHYSICIAN.



LAKE VIEW RETREAT.

Private Institution for the Care and Treatment of Mental and Nervous Diseases.

LOCATED AT BURLINGTON, VT.

The finest situation, and the best adapted building for the purpose, in New England. Perfectly sanitary. Steam-heat in every room. Extensive view of Lake Champlain, Green and Adirondack Mountains. Two physicians: twelve to fifteen patients; with experienced attendants, all members of the Doctor's family. Send for circular and terms.

Enquire of the Editor of this journal.

Address Dr. JOHN M. CLARKE, Burlington, Vt.

GREEN SPRING SANITARIUM AND WATER CURE

FOR THE TREATMENT OF

NERVOUS AND MENTAL DISEASES,

Including the Alcohol and Opium Habit; also diseases incident to women, Skin Diseases, Chronic Rheumatism, and Dyspepsia.

Seventy miles west of Cleveland, in a natural grove of ten acres. Sixteen years successful operation. Means and appliances complete. Treatment by Baths, Electricity, and Massage a speciality.

One of the largest Medicinal Springs in America. Elegant apartments. Terms Moderate. For particulars, address

JOHN S. MARSHALL, M.D., Superintendent,
GREEN SPRING, OHIO.



\$95 Solid Gold Watch. Sold for \$100. until lately. Best \$95 watch in the world. Perfect timekeeper. Warranted.

Heavy Solid Gold Hunting Cases. Both ladies' and gents' sizes, with works and cases of equal value. **One Person** in each locality can secure one free, together with our large and valuable line of **Household Samples.** These samples, as well as the watch, we send **Free**, and after you have kept **Free**, and shown them to those who may have called, they become your own property. Those who write at once can be sure of receiving the **Watch and Samples.** We pay all express, freight, etc. Address **Stinson & Co., Box 812, Portland, Maine.**

BROMIDIA

The Hypnotic.

FORMULA. —

Every fluid drachm contains 15 grains EACH of pure Chloral Hydrat. and purified Brom. Pot., and one-eighth grain EACH of gen. imp. ext. Cannabis Ind. and Hyoscyam.

DOSE. —

One-half to one fluid drachm in WATER or SYRUP every hour until sleep is produced.

INDICATIONS. —

Sleeplessness, Nervousness, Neuralgia, Headache, Convulsions, Colic, Mania, Epilepsy, Irritability, etc. In the restlessness and delirium of Fevers, it is absolutely invaluable.

IT DOES NOT LOCK UP THE SECRETIONS.

PAPINE

The Anodyne.

PAPINE is the Anodyne or pain relieving principle of Opium, the Narcotic and Convulsive elements being eliminated. It has less tendency to cause Nausea, Vomiting, Constipation, etc.

INDICATIONS. —

Same as Opium or Morphia.

DOSE. —

(ONE FLUID DRACHM)—represents the Anodyne principle of one-eighth grain of Morphia.

IODIA

The Alterative and Uterine Tonic.

Formula. —

IODIA is a combination of active Principles obtained from the Green Roots of STILLINGIA, HELONIAS, SAXIFRAGA, Menispermum, and Aromatics. Each fluid drachm also contains five grains IOD.-POTAS. and three grains PHOS-IRON.

Dose. —

One or two fluid drachms (more or less as indicated) three times a day, before meals.

Indications. —

Syphilitic, Scrofulous, and Cutaneous Diseases, Dysmenorrhea, Menorrhagia, Leucorrhœa, Amenorrhœa, Impaired Vitality, Habitual Abortions, and General Uterine Debility.

Specify (BATTLE) when Prescribing Our Preparations.

BATTLE & CO.,

Chemists' Corporation,

Branches:

ST. LOUIS, MO.

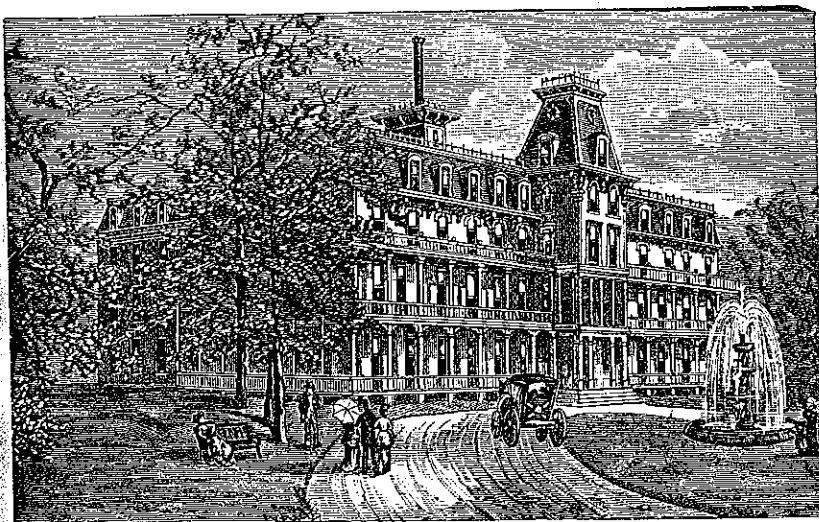
76 New Bond Street, LONDON, W.

5 Rue de La Paix, PARIS.

9 and 10 Dalhousie Square, CALCUTTA.

Medical and Surgical Sanitarium,

BATTLE CREEK, MICH



THIS institution has for nearly eighteen years enjoyed an increasing patronage from all parts of the **United States and Canada**, during which time

MORE THAN TEN THOUSAND PATIENTS

have enjoyed the benefits of its **UNRIVALED FACILITIES** for the treatment of **all forms of Chronic Diseases**, including special treatment for the **EYE, EAR, THROAT,** and **LUNGS**, together with diseases peculiar to each sex.

Special Attention Given to Nervous Diseases.

The managers have spared no expense to perfect the appliances of the establishment to the highest degree, and regardless of cost; and a *personal acquaintance* with the leading Sanitariums of both this country and Europe enables us to say that **no where else in the world** can the invalid in search of health find so great an assemblage of means and appliances for combating disease as are to be found here, including Galvanic, Faradic, and Static Electricity; Massage, Swedish Movements, Manual and Mechanical Turkish, Russian, and Roman Baths, and all forms of Water Baths.

The Buildings of the institution consist of two main buildings, one of which is shown in the accompanying cut, and fourteen cottages. Increasing patronage has made necessary the erection of another large structure, a portion of which will be ready for occupancy by July 1, 1884, making the total length over 430 feet. To these advantages are added.

A SALUBRIOUS LOCATION.

a **Water Supply**, pronounced by an eminent chemist to be of "**Extraordinary Purity**," buildings constructed expressly for the purpose, and fitted with all modern conveniences, including elevator, electric call, etc., thorough ventilation, the most perfect system of sewerage which can be devised, making contamination impossible, a full corps of competent and experienced physicians and well-trained assistants; in fact, **EVERY CONVENIENCE AND COMFORT** for the invalid which money or ingenuity can provide.

Address, for circulars and further information, inclosing stamp,

**J. H. KELLOGG, M. D., Superintendent, or, SANITARIUM,
BATTLE CREEK, MICH.**

THE THIRTY-SIXTH REGULAR PUBLIC COURSE OF LECTURES
IN THE MEDICAL DEPARTMENT OF THE
UNIVERSITY OF VERMONT,

BURLINGTON, VT.

Will begin on the last Thursday of FEBRUARY, 1889, and continue twenty weeks.

FACULTY OF MEDICINE.

- MATTHEW H. BUCKHAM, M. D.,
President.
- A. F. A. KING, A. M., M. D., Wash-
ington, D. C., Professor of Obstetrics and
Diseases of Women.
- A. P. GRINNELL, M. D., Burlington,
Vt., Dean of the Faculty, Professor of
the Theory and Practice of Medicine.
- R. A. WITTHAUS, A. M., M. D., New
York City, Professor of Chemistry and
Toxicology.
- J. HENRY JACKSON, A. M., M. D.,
Barre, Vt., Professor of Physiology and
Microscopic Anatomy.
- J. W. WRIGHT, M. D., New York City,
Professor of Principles and Practice of
Surgery.
- WILLIAM B. TOWLES, M. D., Uni-
versity of Virginia, Professor of General
and Special Anatomy.
- J. H. WOODWARD, A. M., M. D., Bur-
lington, Vt., Professor of Materia Medica
and Therapeutics.

PROFESSORS OF SPECIAL SUBJECTS.

- ROBERT W. TAYLOR, M. D., New
York City, Professor of Diseases of the
Skin and Venereal Diseases.
- STEPHEN M. ROBERTS, A. M., M. D.,
New York City, Professor of Diseases of
Children.
- ADRIAN T. WOODWARD, M. D.,
Brandon, Vt., Professor of Surgical Dis-
eases of Women.
- WILLIAM O. MOORE, M. D., New
York City, Professor of Diseases of the
Eye and Ear.
- WILDER A. BURNAP, A. M., Bur-
lington, Vt., Professor of Medical Juris-
prudence.
- A. M. PHELPS, M. D., New York City,
Professor of Orthopedic Surgery.
- GEORGE B. HOPE, M. D., New York
City, Professor of Diseases of the Throat.
- JOHN A. MEAD, M. D., Rutland, Vt.,
Professor of Sanitary Science.
- HENRY C. TINKHAM, M. D., Burling-
ton, Vt., Demonstrator of Anatomy.

The lectures on special subjects, by gentlemen recognized as authorities in their particular departments, will be delivered during the regular session without extra fee.

NEW COLLEGE BUILDING.

Owing to the generosity of Mr. John P. Howard of Burlington, Vt., a new college building has been erected, with all modern improvements, capable of seating about four hundred students.

HOSPITAL ADVANTAGES.

The Mary Fletcher Hospital, with its commodious amphitheatre, is open for Clinica, Instruction during the session. The Medical and Surgical Clinics of the College will be held in the amphitheatre attached to the hospital.

The Preliminary Term, consisting of a Course of Lectures and Recitations in the various branches of Medicine and Surgery, will begin on the first Thursday of November, 1888, and continue until March 1, 1889. Fee, \$30.00.

The Regular Winter Session will commence on the last Thursday of February, 1889, and continue twenty weeks. This course will consist of from five to six lectures daily, in the various departments of Medicine and Surgery.

FEES FOR THE REGULAR SESSION.

Matriculation Fee, payable each term, \$5.00. Fees for the Full Course of Lectures by all the Professors, \$75.00. Perpetual Ticket, \$125.00. Examination Fee, not returnable, \$25.00.

Students who have already attended two full courses of lectures in other regular schools are admitted on paying the matriculation fee, and \$40.00.

Students who have attended one full course in some regular established medical school, and one full course in this college, are admitted to a third course on paying the matriculation fee and \$25.00.

Graduates of this school are admitted without fee. Graduates of other regular schools and Theological Students are admitted by paying the matriculation fee.

For further particulars and circulars, address the Dean,

Prof. A. P. GRINNELL, M. D., Burlington, Vt.



HORSFORD'S ACID PHOSPHATE,

vs.

Dilute Phosphoric Acid.

The attention of the profession is respectfully invited to some points of difference between Horsford's Acid Phosphate and the dilute phosphoric acid of the pharmacopœia. Horsford's Acid Phosphate *is a solution of the phosphates of lime, magnesia, potash, and iron in such form as to be readily assimilated by the system*, and containing no pyro- or meta-phosphate of any base whatever. It is not made by compounding phosphoric acid, lime, potash, etc., in the laboratory, but is obtained in the form in which it exists in the animal system. Dilute phosphoric acid is simply phosphoric acid and water without any base. Experience has shown that while in certain cases dilute phosphoric acid interfered with digestion, Horsford's Acid Phosphate not only caused no trouble with the digestive organs, but promoted in a marked degree their healthful action. Practice has shown, in a great variety of cases, that it is a *phosphate with an excess of phosphoric acid* that will better meet the requirements of the system than either phosphoric acid or a simple phosphate. "Phosphorus," as such, is not found in the human body, but phosphoric acid in combination with lime, iron, and other bases, *i. e.*, the phosphates is found in the bones, blood, brain, and muscle. It is the phosphates and not the simple phosphoric acid that is found in the urine after severe mental and physical exertion, or during wasting diseases.

We have received a very large number of letters from physicians of the highest standing, in all parts of the country, relating their experience with the Acid Phosphate, and speaking of it in high terms of commendation.

Physicians who have not used Horsford's Acid Phosphate, and who wish to test it, will be furnished a sample on application, without expense, except express charges.

RUMFORD CHEMICAL WORKS, - Providence, R. I.

BEWARE OF IMITATIONS.

THE QUARTERLY JOURNAL OF INEBRIETY,

PUBLISHED AT HARTFORD, CONN.,

IS THE

ONLY JOURNAL PUBLISHED DEVOTED TO THE MEDICAL STUDY

OF

INEBRIETY, ALCOHOLISM, AND OPIUM MANIA.

Every leading and professional man who would keep up with the progress of the times, should read this Journal.

It comes home to every one who is interested in this topic, full of suggestion and instruction, pointing out the practical solution of one of the most difficult problems of modern times.

Subscription Price, only \$2.00 per Year.

TO ADVERTISERS.

This Journal was established in 1876, and is the organ of the AMERICAN ASSOCIATION FOR THE CURE OF INEBRIATES, and taken in all the Asylums and Hospitals in this country, and many in Europe. It is accepted as authority, and circulated among physicians, lawyers, judges, and philanthropists, from *Maine to California*, and in the Provinces of Canada, and all the European nations.

Address,

**T. D. CROTHERS, M. D., Editor,
HARTFORD, CONN.**

WALNUT LODGE, HARTFORD, CONN.,

FOR THE

SPECIAL TREATMENT

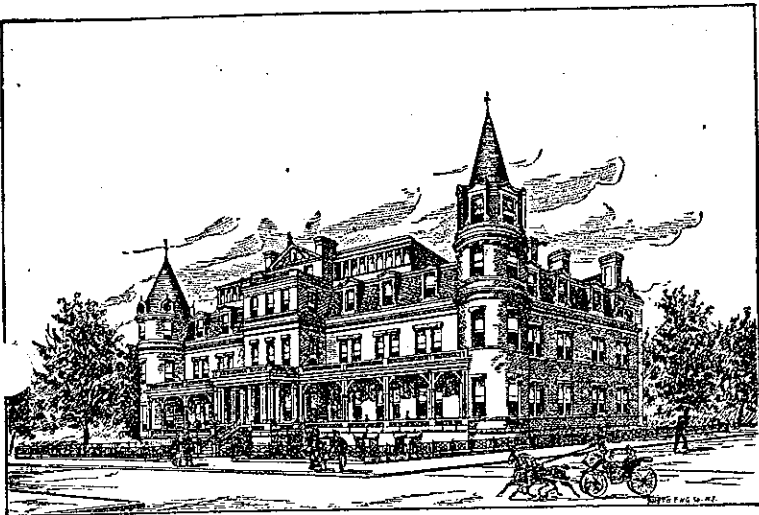
OF

INEBRIATES AND OPIUM CASES.

Such persons are recognized as diseased, requiring absolute removal from temptation; rest, change of thought and living, with legal control; also, every means known to science to bring about restoration. These combined with pleasant surroundings, and the influence of a true CHRISTIAN HOME, give assurance of a permanent cure in most cases. The LODGE is attractively located in the suburbs, where a limited number of patients are received, all of whom come under the direct personal care and supervision of the physician.

Address,

**T. D. CROTHERS, M. D., Supt.,
HARTFORD, CONN., U. S. A.**



DR. WILLIAM A. HAMMOND'S SANITARIUM

—FOR—
DISEASES OF THE NERVOUS SYSTEM,
WASHINGTON, D. C.

DR. WILLIAM A. HAMMOND announces to the medical profession that he has returned from New York to Washington, D. C., where he has established, in a building especially erected for the purpose, a "Sanitarium" for the treatment of mild and curable cases of mental derangement, diseases of the nervous system generally, cases of the morphia and chloral habits, and such other affections as may properly be treated by the remedial agencies under his control. His experience during many years has convinced him that most diseases embraced within the above-named classes can be managed much more successfully in an institution of this kind, under the constant supervision of the physician and with the aid of means not otherwise at command, than when the patients are seen by their medical advisers at intervals of several hours or days.

The "Sanitarium," which has been constructed under the superintendence of A. B. Mullet, Esq., late architect of the United States Treasury department, is situated on Columbia Heights, at the corner of Fourteenth Street and Sheridan Avenue. The position is the highest in the immediate vicinity of Washington, the soil is dry, and all the surroundings are free from noxious influences. It is readily reached by the Fourteenth Street Railway, the cars of which run to the doors. The building is very large, and as perfect in structure and arrangements as is possible from a knowledge of sanitary science and of the requirements of such an institution. It accommodates about thirty patients. So far as the rooms, table, etc., are concerned, they are equal to such as exist in the best hotels of our large cities. Electricity in all its forms, baths, douches, massage, inhalations, nursing, etc., are provided as may be required by patients, in addition to such other medical treatment as may be deemed advisable.

A large "Solarium" for sun-baths and exercise in cold or inclement weather, and heated with steam in winter, is constructed on the top of the main building.

Each patient is thoroughly examined by Dr. Hammond and receives his daily personal attention, while Dr. E. L. Tompkins, a physician of ample hospital experience and of tried executive ability, resides in the institution, and has, under Dr. Hammond, the immediate superintendence.

The "Sanitarium" is now opened for the reception of patients.

For further information Dr. Hammond can be addressed at The Sanitarium, Fourteenth Street and Sheridan Avenue, Washington, D. C.

FELLOWS' HYPO-PHOS-PHITES.

(SYR: HYPOPHOS: COMP: FELLOWS.)

Contains *The Essential Elements* to the Animal Organization — Potash and Lime;

The *Oxydizing Agents*—Iron and Manganese;

The *Tonics*—Quinine and Strychnine;

And the *Vitalizing Constituent*—Phosphorus,

Combined in the form of a syrup, with *slight alkaline reaction*.

It Differs in Effect from all Others, being pleasant to taste, acceptable to the stomach, and harmless under prolonged use.

It has Sustained a High Reputation in America and England for efficiency in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs, and is employed also in various nervous and debilitating diseases with success.

Its Curative Properties are largely attributable to Stimulant, Tonic, and Nutritive qualities, whereby the various organic functions are recruited.

In Cases where innervating constitutional treatment is applied, and tonic treatment is desirable, this preparation will be found to act with safety and satisfaction.

Its Action is Prompt; stimulating the appetite and the digestion, it promotes assimilation, and enters directly into the circulation with the food products.

The Prescribed Dose produces a feeling of buoyancy, removing depression or melancholy, and hence is of great value in the treatment of MENTAL AND NERVOUS AFFECTIONS.

From its exerting a double tonic effect and influencing a healthy flow of the secretions, its use is indicated in a wide range of diseases.

PREPARED BY

JAMES I. FELLOWS, CHEMIST,

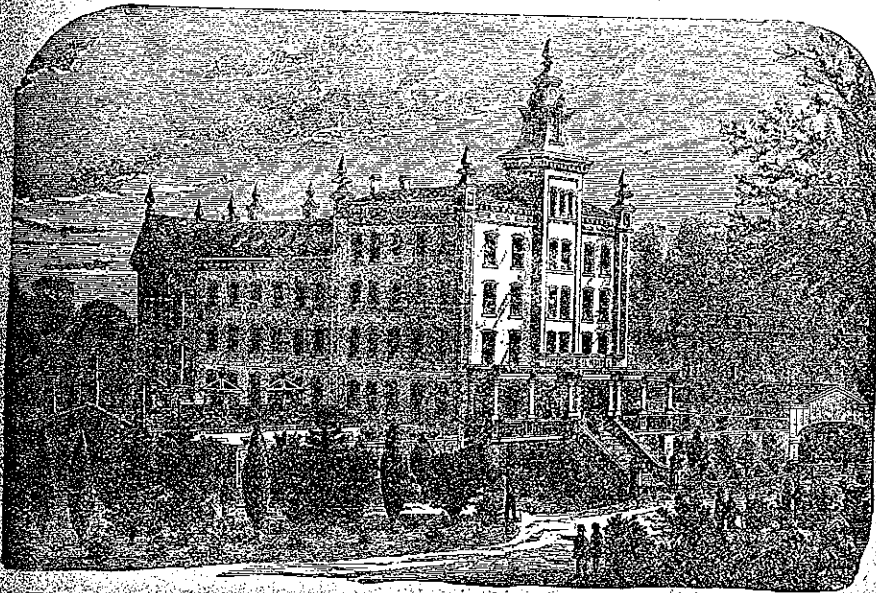
48 VESEY STREET, NEW YORK.

CIRCULARS SENT TO PHYSICIANS ON APPLICATION.

FOR SALE BY ALL DRUGGISTS.

The Inebriate's Home, Fort Hamilton, N. Y.

INCORPORATED 1866.



A HOSPITAL for the TREATMENT of ALCOHOLISM and the OPIUM HABIT.

President, HON. GEORGE G. HERMAN.
Treasurer, HON. WILLIAM M. THOMAS.
Medical Supt., J. A. BLANCHARD, M.D.

Vice-President, SAMUEL A. AVILA.
Secretary and Auditor, J. W. RICHARDSON.
Consulting Physician, L. D. MASON, M.D.

THE BUILDINGS are constructed for this special purpose, and they are more complete and better adapted for the treatment of Dipsomania and the Opium Habit than those of any similar institution in existence. They are situated on one of the most attractive points on the Bay of New York, and stand on a high bluff within one thousand feet of the Narrows, commanding a full view of the whole Eastern Shore of Staten Island, also the broad expanse of the Upper and Lower Bay, dotted with the representative sails of all nations, and enclosed on the horizon by the blue outlines of the Jersey Coast to the North and the Atlantic Ocean to the South. There are separate dining rooms, lodging-rooms and parlors, billiard and bath-rooms. There is also a lecture-room for religious services, readings, concerts, etc. All the New York papers and other newspapers and periodicals are regularly taken.

THE MANAGEMENT is systematic, thorough and adequate. There has been no change in the staff of medical officers since the inauguration of the Home.

THE CLASSIFICATION of patients originated with and is peculiar to this institution. Being determined and regulated upon a strictly commercial basis, it is made to depend upon the character of the lodging, board and other accommodations which the patients or their friends are willing to pay for.

By this equitable arrangement we are enabled to offer board, washing and medical attendance at rates varying from \$10 to \$40 per week. Those paying \$16 and upwards, according to size and situation of quarters selected, are provided with a single apartment and a seat at table in private dining-room—the accommodations in the select rooms and the table being in every respect equal to those of a first-class hotel. Rooms in suit may be had on terms to be agreed upon.

THE RESTRAINTS.—Our system of restraint is compatible with the fullest liberty for each boarder patient to avail himself of all the recreation, amusement and enjoyment which the billiard-room, park and ball grounds, readings, lectures, concerts, musical exercises, etc., afford.

THE DISCIPLINE.—The established code of discipline is comprehended in the observance of THE LAW OF PROPERTY, as universally understood by gentlemen and ladies in the guidance of well-regulated family and social relationships.

Patients are received either on their application or by due process of law. For mode and terms of admission apply to the Superintendent, at the Home, Fort Hamilton (L. I.), New York.

Two daily mails and telegraphic communication to all parts of the country.

HOW TO REACH THE INSTITUTION FROM NEW YORK.—Cross the East River to Brooklyn on Fulton Ferry boat and proceed either by Court street or Third ave. horse cars to transfer office; or, cross from South Ferry on Hamilton Avenue boat and proceed by Fort Hamilton cars to transfer office, thence by steam cars to the Home. Request conductor to leave you at the Lodge Gate.

THE CASCARA SAGRADA FAMINE

The consumption of Cascara Sagrada has been so large that there is at present a great dearth of the genuine bark. Even the inferior varieties adulterated with spurious barks, which are offered in the open market, have greatly advanced in price, and advices from the habitat of Cascara Sagrada state positively that no more of the genuine bark will be obtainable until next fall. The undoubted result of this scarcity will be to flood the market with many inferior and medicinally inert preparations of the drug.

At this juncture it gives us pleasure to state that we have never relied for our supplies of Cascara Sagrada on the inferior article offered in the market, but in accordance with our usual methods take every precaution to obtain supplies from reliable sources.

We have now on hand a large and ample stock of the genuine best quality *Rhamnus Purshiana*. We shall not, however, take advantage of the market and raise our price, but shall continue to supply only the highest quality preparations of the drug at our regular price. We believe physicians, in view of the facts stated and of our special knowledge of Cascara Sagrada, obtained by long and careful study of its properties and manufacture, will see the propriety of specifying only Cascara Sagrada of our manufacture. Send for our Working Bulletin and Monograph on *Rhamnus Purshiana*.

The Pepsin Question!

What Pepsin do you prescribe, and why? If you will examine the facts we present, you can have only one opinion as to Pepsin in future. Circulars fully presenting the claims we make for our scale Pepsin, with a sample of it, will be mailed to physicians who wish to investigate it.

We can only say here that in appearance, solubility, digestive strength, and permanence, it is far superior, and admittedly so, to any Pepsin hitherto introduced.

A careful search through the prescriptions of a prominent New York pharmacist reveals the surprising fact that fully 75 per cent of physicians neglect to specify when prescribing Pepsin, but simply order "pure Pepsin." Now they might as consistently order "solution of cocaine," without designating any particular strength.

"Pure Pepsin," as it is known commercially, is not a definite principle; neither has the Pharmacopœia as yet established a standard of strength, and consequently every producer is a law unto himself. It is obvious that digestive activity is the sole criterion of therapeutic value in preparations of this proteolytic ferment, and a physician is consequently enabled to predict with reasonable certainty the comparative effect that may be expected from the various Pepsins found in the market.

The following tabulated statement of the comparative quantities that should be prescribed in order to accomplish the same purpose may, therefore, enable them to so write their prescriptions that the best shall be obtained at the lowest price.

These figures are based upon each manufacturer's claim, without regard to the discrepancies which we know to exist; but when the fact be considered that our Pepsinum Purum in Lamellis, with a digestive power of one to 2,000, is marketed at a price comparing favorably with that established for many of the inferior varieties, the economy of its employment becomes patent. If it is desired to administer sufficient of the ferment to dissolve 1,000 grs. of albumen, obviously $\frac{1}{2}$ gr. of the aforementioned Pepsin will be sufficient. To derive the same therapeutic effect from one for which the manufacturer claims a power of 1,200 8-10 gr. will be necessary. A power of 1,000, 1 gr.; a power of 900, 1 1-10 gr.; a power of 700, 1 4-5 gr.; a power of 500, 2 grs.; a power of 150, 6 7-10 grs., while a power of 50 (which is the standard adopted by our Pharmacopœia), 20 grs. will be necessary.

PARKE, DAVIS & CO.,

Manufacturing Chemists,

Detroit, Mich.

NEW YORK BRANCH:

OFFICE, 60 Maiden Lane.

WAREHOUSE AND SHIPPING DEPOT, 21 Liberty St.

CRUDE DRUG WAREHOUSE, 218 Pearl St.