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In the first place, we must not let the Western people feel that they are to be taught by the new nations, and especially by a nation which has been so long and so far from home, and which has so many things to learn from us.

It was in the month of November, 1870, in Philadelphia, that several of our friends in the ranks of the American Association of New York City. They had had a long and interesting conversation with me, and I had been in the view of the cause and a more of particular interest to me, and I was very glad to see them. We were in the city of New York, and I was very glad to see them. We had had a long and interesting conversation with me. The late Dr. William Parker of New York, and Dr. William Parker who, in all the meetings, made the most of his statement which served as the key note of all the efforts. What was the special benefit? He said in the answer, we are and with the inquiry, "what is the best?" The answer is, "alcohol." Its action upon the body, secret, open, spirit, and prussic acid, etc., in short, it is a well-stimulant and tonic. In larger doses, it becomes a general irritant, producing madness, or a morbid, producing coma and death.

It being settled that disease is the outcome of its use, we must use the alcohol, can it be cured? The answer is, "alcohol." Inebriety can be cured, etc."

I had the pleasure of the arrangement of Dr. Parker as the very first introduction of the new course, and I ask you to remember it, especially for reasons that shall presently appear. One more word, and I will say it must be the steady aim of this body to impart sobriety to the world, thus enlighten the public mind, showing it to move in its power, and demand protection against disease, inflicting more destructive than cholera, yellow fever, smallpox, or typhus, which are now so cruelly general.

I do not think there is an existence a more plain, concise, and easily comprehensible, definition of alcohol and its effects upon the human system than this.

It is a remarkable fact that about my previous conference, we were required to do the course of procedure to be held in the meeting. It was soon found that there were eight persons present, and in the hands of those authors, ready to be selected as the speakers. The names of those who held them. The range of these essays is as remarkable as their spontaneous character.

The religious influence of alcohol, and the nature of the declaration, The Philosophy of Intemperance, The Disasters of Inebriety, from a paper written and forwarded by the humane inmates of a sanatorium, The History of the Waste Paper Home of Inebriety, Resistant as a Kennedy for Inebriety, The Relation of the Church to Inebriates, Asylum in their relations to Social and Political Economy, and The Moral and Social Treatment of Inebriates.

I might continue with extracts from these valuable papers to the point of weariness, but I have said enough to show the scope of the discussion, and the breadth of the foundation on which the association was constructed.

The principles which were agreed upon with entire unanimity, were arranged in the form of a *Declaration*, and given to the press, and the community.

In addition to this method, 5,000 copies of the proceedings were published in a pamphlet of eighty-four pages, and gratuitously circulated. Public libraries, and authors and public men were liberally supplied, and the same course pursued year after year till the advent of Dr. Crothers, whose energy and devotion to the cause gave a fresh impetus to the whole by undertaking "The Journal of Inebriety," which is reliable as an exponent of the principles and methods of the association, and is conducted with an ability so decided as to command a generous support.

We have now reached a period in our history of unusual interest. Dr. Donald Dalrymple, M. P., England, visits America's institution.

Our mother country had been aroused to a fresh consideration of the alarming increase of intemperance, and an effort to secure proper legislation on the subject was made by the

proportion of a committee of the House of Commons "to consider the best plan for the control and management of habitual drunkards." Dr. Donald Brymner, M. P., was chairman of the committee, and in order to inform himself thoroughly as to the effect of legislation, and the working of asylums and homes for inmates in the United States, he came to this country and visited several of our institutions; but before his mission was entirely fulfilled he was called home on account of illness in his family, but left a committee in attendance on me, asking certain questions as to the plan and results of treatment. He also added the following: "Lastly, I have the request to make, which I desire to urge with my utmost power, viz.: that a delegation of at least two of the most competent and best informed of those who are conversant with these institutions should come to England and give their evidence before the committee of the House of Commons that will meet early in the session of next year."

Summons from House of Commons (Committee and Appointment of Dr. Kerr).

In addition to this request of the chairman of the committee, the following *official* communication from the committee was also delivered:

HOUSE OF COMMONS, LONDON,
March 2, 1872.

"SIR.—I am directed by the select committee of the House of Commons appointed to consider the best plan for the control and management of habitual drunkards, and of which committee Dr. Dainyng is chairman, to request your attendance before them for the purpose of giving evidence. The committee would be glad if you could make it convenient to attend upon them during the week commencing the 15th of April. Should this be inconvenient, on as early a date after as convenient to yourself. The days of meeting of the committee are Tuesdays and Fridays.

ARTHUR F. KINGSFOTE,
(Signed) "Committee Clerk."

I am particular to quote these in full, because it has been said that the delegates were unauthorized and that their evidence was inoperative, and an interference with British legislation.

In compliance with this double invitation or request, the association appointed the late Dr. Deane and myself to represent the on before the Committee. The visit was made, and an elaborate report in regard to our testimony was published, which was embodied in the committee's report to the House of Commons, and is now a part of their official record.

Letter from Dr. Norman Kerr, London.

I now call your attention to a communication received by me within a few days from Dr. Norman Kerr, an eminent physician in London and the acknowledged leader of British thought and practice in this department of professional work. It shows the effect of the testimony upon the public mind and the legislation of Great Britain.

Dr. Kerr had lectured thirty-seven years ago in Scotland, and later in Portland, Maine, on temperance. "But (he says) though thus engaged in the study, cure, and prevention of inebriety at so early a date, having after a brief trial of moral means *only* being driven to treat inebriates as subjects of disease, I was quietly working by myself. You and your association had been actively working for six years before I took any part in this country in associated effort at legislation for the therapeutic cure of the inebriate. Indeed it was entirely owing to your association's persistent and splendid campaign on behalf of the inebriate that I was attracted to this special agitation. So that the American society for the study and cure of inebriety should be credited with whatever little I have been privileged to do in this important and pressing work. . . . So much in acknowledgment of my *own* deep obligations to you and your society. Let me recall, now, a few of the obligations, which the *general movement in England owes to your American propaganda*. Though legislation for the treatment of the inebriate was broached in 1857, in the

report of the Spanish-Lancey Commission, the credit of having a demand for the special department of legislative enactment of treating insanity as a disease, in the same manner as other allied ailments, must be awarded to the great Republic of the West.

"In 1872, in the second year of your association's existence, in response to a request from a select committee of the House of Commons, you and the late Dr. Dodge gave evidence before that committee of so valuable a character that the committee presented a report which, if it had been embodied in legislation, would have brought England alongside of the United States in this matter. Beyond all question, the American testimony had a powerful effect in the drafting of the committee's report, and has ever since wielded a potent influence on the public mind of Britain."

"We have at different times had the honor of extraordinary gatherings for the reception of various members and friends of your society, notably of yourself, Dr. Crothers, Dr. T. L. Wright, Mr. Schermerhorn, Dr. Simon Pritch, and Mr. Clark Hall, who has done so much lately to bring our question to the front."

"Members of the Houses of Lords and Commons, with eminent representatives of the learned professions, have been among the auditors at our meetings. These 'proceedings' have also been circulated, and had influence in legal circles."

"A few early 'proceedings' were read with interest on this side of the Atlantic, but a still more marked and deeper interest was evoked among us by the advent, in 1887, of the 'Quarterly Journal of Inebriety,' your society's organ."

Dairympole Home Opened.

In 1873 the "Dairympole Home" at Rickmansworth was opened, under an act entitled the "Habitué Drunkards Bill" introduced by Dr. Cameron, M.P., which was finally enacted in 1879. Dr. Kerr in alluding to this subject says:

"Under Dr. Cameron's act, among other licensed retreats the Dairympole Home was opened by a disinterested associa-

tion as an experiment conducted in the light of public criticism on such conditions as were believed to be most favorable to cure, among these conditions being ample grounds for exercise and a paid medical officer who could devote his whole time and attention to the treatment of the patients, influenced by considerations of pecuniary profit or loss. The experiment has been more successful than the most sanguine of its promoters hoped for, almost one-half of the 152 patients discharged having remained firm."

Under this head it is sufficient to say that the government Inspector whose duty it is to visit all such retreats, reports favorably of their conduct and progress, and recommends further and more favorable legislation.

Dr. Crothers visits Dairympole Home.

While on a recent visit to England, it was my privilege to spend a week at the Dairympole Home, and by the courtesy of its medical head, Dr. Brambwaite, I had unrestricted liberty to examine at all times all parts of the premises, and to converse freely with the inmates; and if my testimony may be of any service, I am free to say, after a week's residence, with such privileges as I have mentioned, I felt the institution with a firm belief that it was a model of its kind, and that I knew no place in any country where the unfortunate victims of alcoholism had better treatment, or were more likely to recover than at the Dairympole Home of Rickmansworth, England.

Jurisprudence.

You will be pleased to know that in the line of jurisprudence we have not been idle.

Dr. Crothers and I have on several occasions addressed medico-legal and jurisprudence societies on the questions of criminality and responsibility of inebriates, which have been occasions for able discussions by eminent jurists and physicians. Our papers have not only been published with the official transactions of these several societies, but copies of reprints have been furnished for gratuitous distribution. For

The special department we are indebted to for the material for the history of what I call the "New York" type. The movement that has taken form in the profession, so far as the good name of American intelligence in the *Journal of the American Psychological Association* is concerned, is the following:

Dr. George Peckham's Address.

A like interest has been awakened in Great Britain, and by the kindness of Dr. Keet, from whose almost exhaustive resources in this realm of thought we are continually being supplied, I am able to furnish a most remarkable individual opinion, which seems to be by and the line of safety, and for which we in this country at least are not yet ready. Had Lord Young committed the transgression to a hospital for treatment on to a cerebral system we could say, "Amen."

Lord Young of Glasgow, last August, on a charge against a number of able men, by neglect and starvation, owing to her starvation, contributing in various manners, would not allow the case to go to the jury, declaring that that court should not hold excessive thinking to be a crime, and defining "crimes" as "insanity involving no responsibility."

Journal of the American Psychological Association.

In 1887 an era was inaugurated by the Society for the Study of Psychology in Great Britain, which will be referred to in this volume as the beginning of a successful campaign, the success of which can only be measured by the boundaries of the world, where the nations thereof shall lift up their standard, and march towards a victory which in the name of science and philanthropy shall accomplish all that human agency can strive to do for the tormented by appetite, and the enslaved by passion.

I refer to the assembling of an International Congress in 1887, in allaying to which important event Dr. Keet says: "In 1887 the International Congress, organized by the Society for the Study of Psychology, was held in London, and was attended by delegates from nearly every country. The American delegation from your society, with several papers

from your country, composed a report on the subject of the study of psychology, and the influence of the Congress. For one of these reports, a report of people, the improvement of our existing psychological legislation, and our political law administration, we have mainly to thank the American legislation as the primary propelling force." So now a far Great Britain.

The title paper that was read into the stagnant sea of public sentiment in 1876, has been withdrawn, the circle of its highest, till not only in far as Belgium, and have they passed, but the highest, has been left on almost every shore. Conventions and congresses have been held in France and Switzerland and other nations. Italy and Russia, and words of greeting, and ask for information and encouragement. A letter from Prof. Paul Kowalewsky (Professor of Psychology and Nervous Disease in the University of Charkoff, Russia) addressed to me, expresses great interest, and sends copies of his work in which he quotes liberally from the Association and the writings of its members.

It is said of Australia, that she sits majestically in an invisible cradle, and is held *in situ* by its strong rocky ribs. Whether this be so, yes or nay, Australia's voice is lifted up, and crosses the main to our peaceful land, bringing the good tidings that years ago Dr. McArthur, of Melbourne, had inaugurated a movement based on the same declaration of principles, and that since then, in 1886, a Rev. W. L. Morton, of Bascom, had started a home which he calls "Hope Lodge," and commencing with two rooms, he has now twenty-five, allied with the unfortunate victims of excess. His report refers to discouragements and disappointments, but says also "that there have been many delightful cases of rescued lives." So the work goes on, even in the islands of the seas.

Temporary Congress in Africa.

An item of news of some interest, although not specifically and directly identified with the scientific aspect of this subject, may be stated thus:

...the Convention was held in New York City, and the proceedings were conducted in a most orderly and efficient manner.

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to get a talk, we shall be glad to have him do so. I shall take care of him while in this vicinity, and pass him on to Dr. Ethelbert of Port Hamilton, and Dr. Mason of Brooklyn. From there to Dr. Crothers of Hartford, and Day of Boston. From there he can start on a tour of the West, and he will see Hughes of St. Louis, and Wright of Bellefontaine, Ohio.

If he will do this, after his return to England he may write another little book in which he will strongly advocate what he opposed in the one first mentioned.

The Medical Profession Unchecked

I desire now to call attention to an error which we constantly hear repeated, and if possible to correct it. It is that medical men are accountable for much of the drunkenness existing among us, and that they create the desire by administering alcoholics to the sick. The charge is gravely made that as a class they are opposed to the temperance movement; I have before me a little pamphlet from which I shall read. It is a "Catechism on Alcohol with responsive exercises on temperance by John Coleman." This primer is published in New York, by the "National Temperance Society and Publication House."

It is intended to be taught to children, that when they grow up they may be firm temperance men and women. What does it teach? The teacher had been giving a lesson that drunkards were at first fascinated by alcoholic potations, and in answer to the question, By what other means are the people persuaded that a little is good, the reply tells them, "The doctors say that a little is good, and they order it for medicine." She then proceeds to state that by this means the terrible appetite is formed, and drunkards are made, and the doctors have taught the common use of distilled spirits, and that the people did not drink till the doctors taught them; that the doctors call them good, and order them so much that the people learn to take them themselves; and that the doctors in this way are probably the greatest of all hindrances to the temperance cause; that so long as the doctors say a

little is good, and the people do not study into the matter for themselves, they will believe that *a little* is good, and drink and make drunkards as they have done in the past.

The little primer then proceeds to teach the children that the doctors must find some other way of treating their patients, and to bring this about is for the *children to refuse to take alcoholic medicines.*

A Scientific Experiment that is not Scientific.

But there is still an equally absurd presentation of what is assumed to be a scientific experiment. The question is asked, "What happens when food is put into a bottle with alcohol?" The answer is that "the alcohol prevents decay;" and when taken in the stomach indigestion is engendered, food is hindered from being appropriated, and "it creates sores there;" etc. For a moment let us contrast a bottle with the human stomach. The latter has a temperature of its own; it has a wonderful vital chemistry of its own; it has juices and secretions peculiar to itself. How absurd to teach that food taken into the stomach and food put into a bottle undergo a similar process! To make the analogy complete the bottle should have sores.

Again, the children are taught in Miss Coleman's little catechism that "more than half the insane people in this country are made so through drink."

It is difficult to comprehend how such discreet and honorable men as are found in the official board of the National Temperance Society can allow such utterances to appear under their names and with their sanction. It is to be hoped that future publications of this influential society will be more in accordance with truth and the dignity of the subject.

Facts that are Truths.

But let us look at the facts as they are. It is not difficult to get an opinion of the medical profession upon any subject on which an expression is desired, because of the completeness and cooperation of their organization. Each county in

most of the States has a medical society which is annually represented in a State society, as well as in a national assembly known as the American Medical Association, to which every county society in every State may send delegates. After this comes the International Medical Congress, meeting alternately in the capitals or other cities of different nations.

It may be seen how readily by this continuous chain of communication, an expression of opinion upon any subject may be had.

National Medical Congress, 1876.

In the year 1876 there was held in Philadelphia one of these *International Medical Congresses*, which was composed of about six hundred delegates of different nationalities.

"The National Temperance Society," "The Women's Christian Temperance Union," and "The New York Friends Temperance Union," each addressed a memorial to that distinguished body, requesting it to make a public declaration of its opinions as to the status of alcohol as an alleged food or medicine, etc.

The memorials were referred by the congress to the section on medicine, before which a valuable paper was read by Dr. Ezra M. Hunt, now secretary of the Board of Health of New Jersey, covering the question proposed by the memorialists. After a full and free discussion that was remarkable for ability and earnestness, the conclusions which the author of the paper presented were unanimously adopted as the sentiments of the section on medicine. As such they were reported for acceptance to the general congress, and by it ordered to be transmitted to the memorialists in reply to their question.

To condense these answers, in the opinion of medical men the world over, the question of the food value of alcohol is yet unsettled. As a medicine it is useful in some conditions, but its administration should be confined to the medical profession. Physicians are not accountable for its use by the laity, nor for the evils resulting from such use. Alcoholic liquors are not as pure as medicines should be.

There is no doubt that some physicians are prepared to go farther than this, but an average opinion concurred in by physicians from nearly all nations, is a sufficient rebuke to the careless and unqualified assumption of the caricature, that doctors have taught people to become drunkards, and by their advice the evil is continued.

Let me refer to the opinion of an eminent total abstinence physician on this doctor question, Dr. P. S. Davis of Chicago, the originator of the American Medical Association, and the choice of his countrymen for the presidency of the late International Medical Congress, held at Washington in 1887. He is quoted as saying that there are thousands of physicians who abstain from the use of intoxicants as a beverage, and he reports that in Illinois the State Medical Society, of several hundred members, convenes annually, closing their professional labors with a banquet, from which all intoxicants are excluded. I have no doubt that the same may be said of other State and county societies.

British Medical Temperance Society.

In Great Britain there is a Temperance Society, composed exclusively of medical men, which was organized, I believe, in 1876, with its headquarters in London; there is an Irish branch with headquarters in Dublin, another in Scotland, another for the north of Ireland, with its headquarters at Belfast, and another in Wales, numbering, with a few medical students as associates, over five hundred members.

I had the honor of breakfasting with about three hundred total doctors at a meeting held in Dublin in 1887. Nothing was served as a beverage stronger than English breakfast tea, which was poured from the well-known black china teapots stationed in rows about six feet apart along the middle of the tables.

If beer is the drink of many, and the stronger alcoholics of some, the drink of the sober *Briton is tea*; also of total doctors, who might if they would, or could, sing the old Scotch song:

The Pledge of Tea

Let me remind you, then, that I am not a
 fanatic, as you have said, and that
 I am not a fanatic, as you have said,
 in my opinion, and in my opinion.

Come, come, my boy,

As a child of mine, we should not

Prize cup of tea.

In Temperance's name, then, my advice is,

Let all for tea-cups, whence their glasses:

Now hither, hither to Father's asses,

In drinking tea;

When such pure, real, domestic bliss is

In cup of tea.

No Pledge for Doctors.

Physicians are not required to sign a pledge on entering the society. It assumes that no gentleman would offer to join whose principles and practice are not in accord with those of the society.

This brings me to remark upon the difference between the people there and here in the matter of the pledge. In this country a person is not considered sound on the temperance question who has not taken the pledge, and joined some one of the many societies or orders that require pledge-taking as a token of membership. In England there are many friends of the cause and advocates of it who are not pledged,—Church and government dignitaries, men who stand high in social life, titled men, whose names and positions command influence, are found in the field and are doing good,—they are total abstinents, but not pledged as such, but the fact of their total abstinence principles and conduct entitles them to recognition. Not so with us. We seem to have forgotten that among true, real, and practical temperance men there are many more outside of temperance societies than inside. At least that is my observation. And you may ask, why are they outside? The answer is, because they have scruples about signing a pledge, and you will not allow them to enter without one. The cause suffers great loss, so I believe, by such a policy.

American Cause.

The American conscience is right upon the subject. It approves of sobriety and good order. It looks upon temperance living, and in all that temperate living includes and involves, with approval. The moral sense of the American people rejoices over every effort to promote right living and establish justice.

In obedience to these claims upon personal and individual character, there are thousands of good, honest, working men outside of societies, clubs, leagues, or orders of any kind, who are doing a silent unrecognized service, the only record of which is in the book that angels keep.

Dr. Mason's Reward of One Hundred Dollars.

I notice now what is being done by one of our vice-presidents, the worthy son of a father of whom I cannot think without a feeling akin to reverence. Our vice-president, Dr. L. D. Mason, has given an example of the zeal and enterprise of the younger members of our association, by issuing a circular through the *Journal* and other medical periodicals, addressed to *The Medical Hierarchists* offering one hundred dollars for the best essay on "The Pathological Lesions of Chronic Alcoholism, capable of Microscopic Demonstration." Distinguished microscopists of New York and Brooklyn will act as a committee to decide upon the award. This opens another avenue for research. The reach of the microscopic world is far beyond the ken of the human eye. It is indeed outside the realm of human thought, unless aided by the magnifying lens to discover, and interpreted by the science of life itself to understand. All praise to Dr. Mason for this new departure leading to new discoveries.

What Remains to be Done.

In the open field before us there are a few duties, that are plain to see and not difficult to perform. In the name of the Association, the Congress of the United States should be reminded of the solemn fact that no suitable provision is made

for the indigent class of the army and navy. Asylums for the insane are designed to be improper resorts for such by the superintendents of said institutions, and the moral sense of the people declares against commitment to prison cells.

The Bureau of Education at Washington, the State superintendents of public schools, and the presidents of colleges should be addressed in the same behalf, and the governors of each State and Territory requested to consider the propriety of calling the attention of the Legislatures of the respective States and Territories to the consideration of the subject. We cannot tell how much of such seed-sowing may take root, and bring forth fruit, but remembering the rapid, almost phenomenal, growth during the past twenty years of the disease dogma, we need not stop to inquire. "What will the harvest be?" Our work is sowing; the reapers come after us.

Before bringing this address to a close let us pause a moment, and try and listen for certain voices we have been accustomed to hear at the annual rally-call, but which no longer respond. Yes! we may hear them as we have heard our own voices when we have sailed on the bosom of a lake and called to the mountains that are around it, and they have answered back. We remember how the words we uttered were thrown against the mountain sides, and then how they would rap to their summits, and sweep along and through the valleys, rising and falling with ever varying cadency, till in the faintest murmurs, they are wafted into the distance, and we hear them no more. We call this *Silence*; but, think ye, are they not going on still? Do not words of truth live? Is not truth itself immortal? Tennyson says:

"Our voices fall from soul to soul,
And grow forever and forever!"

Is this true? If so, the words of PARKER, of the Elder MASON, of DEFOUR, of WHITNEY, and others are still on their mission. The words we utter, if they are true and wise, have started on their errand, and will drop fatness, to nourish those who come after.

THE STUDY OF INEBRIETY AND ITS RELATION TO THE TEMPERANCE MOVEMENT.

BY NORRIS KILMER, M.D., F.R.S.*

President of Sweden for the Study of Inebriety, etc., etc.

The first half of this century can claim a distinguishing feature which has characterized none of its predecessors. In every age of the world's history there has been some voice uplifted on behalf of sobriety; there has been some clear, outstanding, bold vindication of abstinence; there has been some glowing eulogy of temperate living. At times, in the story of the human race, there have even flourished communities bound by strict vows of abstinence from all intoxicant beverages, a striking protest against habits of excessive drinking. But never till the nineteenth century has there been a thoroughly organized and equipped temperance reformation. We have the happiness to live in an age when the testimony for temperance has been collected and collected, when the legitimate forces engaged in the warfare against drunkenness have been marshaled under one common banner, when there has been laid, broad and deep, the foundations of the great movement, than which no nobler or more beneficent undertaking has ever touched the heart and ennobled the life of human kind.

Splendid as these achievements have been, they fall far short of the necessities of the case. While some phases of our prevailing intemperance have improved, others have become worse. Take one instance: intoxication has decidedly diminished in the male sex, but drinking by females has markedly increased. The latter phenomenon, though emphasized by the committee of the house of lords, has been

*An address delivered before the National Temperance Congress at Birmingham, England, in November, 1889.

the fact that the "strong" and the "weak" are not absolute terms, but relative to the individual's own state of mind and body. The "strong" is not a person who is always strong, but a person who is strong at a particular time. The "weak" is not a person who is always weak, but a person who is weak at a particular time. The "strong" and the "weak" are not fixed qualities, but variable states. The "strong" is a person who is strong at a particular time, and the "weak" is a person who is weak at a particular time. The "strong" and the "weak" are not absolute terms, but relative to the individual's own state of mind and body. The "strong" is not a person who is always strong, but a person who is strong at a particular time. The "weak" is not a person who is always weak, but a person who is weak at a particular time. The "strong" and the "weak" are not fixed qualities, but variable states. The "strong" is a person who is strong at a particular time, and the "weak" is a person who is weak at a particular time.

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In 1873 the Knabes were 1673 and 1673 following years 1873, 1673, 7, 1673, 1673, 1673, 1673.

The one question that needs us is: Why do not all who drink intoxicating liquors either continue "finished" drinkers or think no excess? Putting aside for a moment the comparative character of the intoxicating agent, which is of course the same to all who use it, why do some persons remain "refreshed" drinkers all their life and others become drunkards?

The only reply after some thirty years' experience in the treatment of such cases, which I can give is: that in those individuals who have fallen before the wiles of the champion or under alcohol—there has been either from birth or acquired a defective inhibition or resisting power, a special proclivity to excess, or a special susceptibility to the anesthetic or benumbing properties of the spirituous. The property of resistance are not handicapped by either this defect of control, this proclivity or this susceptibility, and I consider the so-called "moderate" drinker far outnumbered the drunkards.

What is this inhibitory weakness, this proclivity, this susceptibility? They are symptoms of a diseased condition, very similar to what is often seen preceding the development of insane symptoms. A constitution, with such abnormal qualities, cannot be accurately described as perfectly healthy. Weak drinkers who have a thoroughly sound mind and body, a sound body can pass temporarily through disease, distress and wasting disease unscathed by the power of nature; those who are weighed with the weaker and more dull are nervous organization are apt to be precipitated into deep and drunken paroxysms in the perturbation of a comparatively slight nervous shock. To compare such an one a total disarrangement is a blow under which the subject staggers. The mental equilibrium is disturbed, the brain, the reason is obscured, control is lost, the mind is overwhelmed in an agony of despair, the whole man

to be a well kind of nervous unrest and stress, finally to be regarded as the positive remedy has expanded. It is not only the bed-ridden sufferer, sometimes a habit and delirium, possible in the delirium of opium.

In cases of which there is per se of many types, there has been a decrease, state and a form of the act of drinking, and the intoxicant of right being, the means whereby the patient is probably forgotten, was defined.

This disorder, which is often in the body, persons are in the "degenerate" use of medicine, a part from inherited and other causes, I have proposed to call indolence or perversion. The term is from the verb "to sleep" and signifies a kind of torpor or inactivity. This indolence, which is developed as a disease of the higher nerve centres when the will has become too relaxed to resist the abnormal tendency. Its characteristic feature is a very powerful impulse by or even for the intention arising independent of and often in opposition to the will. The indolence is not so much for them for its own sake as for the feeling which is one of the objects of the drink. In fact, the indolence generally begets the taste and the stage of the drink, the whereby of which he is powerless to withstand, though he felt his salvation. This is not a digressive effect, namely, which is a misnomer. Many apparently inveterate mechanics and other tradesmen, there is an ailment of indolence, which in certain cases is functional and organic disturbance, but is frequently absent. The indolence may exist without alcohol and when he does usually prefers water without alcohol water being a disinclination and alcohol a first preference. Neither is this ailment the same as drunkenness. The effects of disease of indolence may exist without a single drinker and first. Just as indolence, which is not the disease of indolence, is a drinker, in fact, it is not the disease of indolence. The indolence and the indolence are the outcome of the disease but not the disease itself. The varieties of indolence are numerous.

The first kind of indolence, the most common form is the

alcohol. For the reason that this group of ailments is in more general use and is more readily obtainable than any other intoxicating article. Of this form of indolence there are various types with characteristic features corresponding to the different alcoholic preparations.

Keen, gin, whiskey and brandy being stronger in alcohol, the violence of the poison is more thanly shielded with the water without which we could not drink strong drink and the moderate manifestations are more pronounced than in wine, beer or other indolence. The less highly rectified spirits of the European Continent contain more fusel oil than our British spirits, and in consequence are even more injurious than our own. Belgium, France, across the English Channel is more fatal than with us, alcoholic insanity is more frequent and its character more violent, while the moderate character of an indulger in the cruder and heavier alcoholic beverages is shorter and more thickly studied with physical suffering and mental perversion. It is for this reason, probably, that the only special hospital in the world for the treatment of acute alcoholic disease is the asylum of St. Anne's in Paris.

Methylated or wood spirit, an alcoholic intoxicant, differing slightly in some of its properties from ethylic alcohol (the alcohol of our purest fermented wines and distilled spirits), has of late years been the favorite ingredient of an increasing number of her majesty's subjects. Especially in Edinburgh and Glasgow, on Sundays, when the public houses are shut, this repulsive and cheap spirit has been retained by a certain class of druggists. The fashion has spread, and methylated spirit is now drunk for purposes of intoxication in many localities. I called attention to this Scotch innovation in the first edition of my work on Indolence, and I am happy to see that parliament has legislated in the hope of minimizing this new alcoholic departure.

Ginger and capsaicin febricity are forms, practically of the alcoholic type, as these substances are usually taken in a strongly alcoholic preparation; but they exhibit some addi-

mental features. The depression in the reaction after the moderate intemperance of an excessive quantity of pure fermented wine alcohol is stronger than with alcohol alone. Can or indeed is spending largely in the United States, and though at a less swift pace, yet gradually at home. I have had patients on both sexes, all very bad cases. In Georgia the same has had to fracture Jamaica's finger along with other irritating agents as embraced under the restrictions of a license to sell intoxicating drinks.

The alcoholic is frequently spoken and written about as if it were the only form of intemperance. No mistake could well be more egregious. There are intoxicating substances which are consumed to excess, slavery to which is as terrible as, in some respects more terrible than, even the dread and certain bondage to alcoholic serfdom.

The unutterably miserable and woe-begone bondsmen and bondswomen of opium, many of whom do not know the name of an alcoholic draught, and who can be numbered by the million, are in a worse and more pitiable plight. Though in the main the fastidious juice of the poppy soothes, while alcohol maddens, and though the serious organic lesions which record as do footprints on fossil rocks the tread of a prehistoric herd the destroying march of alcoholic poison on the vital organs of the human body are absent on a *Testis* examination where opium addiction has been the real cause of premature death, yet opiate intemperance presents certain aspects of peculiar horror. It is, for example, more aweful to see a fellow-creature waste rapidly away without any apparent facility or mental fitness than to see him kill himself by the alcoholic degeneration of his liver or his kidneys. In the latter case the steps of the poisoning process are patent: the pain, drowsy, and fighting for breath are plain to all beholders. In the former, without any of the earlier symptoms of deadly import, the wretched object becomes almost imperceptibly weak and languid, his skin becomes as cold as marble, and, as he gradually passes from his ordinary health, spiritual, emaciated form, he pines

away. Again, the opium drunkard is much less curable than the alcohol inebriate. It is a much harder undertaking to cure him, and the ratio of those who prove that they are not answerable to treatment is incredibly greater. Once more, though opium in general is not provocative of the criminal violence which is so often the fruit of alcoholic passions, there is a stage in opiate excitation which is often accompanied by the most unbridled passion, by more revolting brutality. Gambling and immorality are too often the unholy or companions of opiate narcomania.

After, however, ample allowance for the differing characteristics of alcohol and opium inebriety, the broad fact remains that both alcohol and opium are deadly poisons, destructive to life, and inimical to the highest and best interests of humanity. Honor, duty, and self-preservation demand our entire abstinence from such perilous drugs, unless when taken, with due precautions and on skilled advice, as purely medicinal remedies for the occasion only. The common weal of Western and Eastern peoples calls aloud with the clear voice of reason to the governing powers of Britain, either by a measure of national prohibition to render unlawful the common sale of these baleful poisons, or, by a satisfactory process of local option, to invest the people themselves with the power of ridding their respective countries from a common nuisance and a common danger. Especially does the gradually awakening popular conscience, in tones tremulous with righteous indignation, demand that the government of Great Britain will cease their infamous demoralization of native races by encouraging the sale of alcoholic beverages in India, and by practically forcing upon the Chinese the sale and consumption of opiate narcotics.

Nor is inebriety restricted to alcohol and opium. One of the most steadily increasing forms is ether addiction. For more than a quarter of a century a limited region in the north of Ireland has been the principal seat of operations. But during the past decade the area over which this misera- ble habit has prevailed has greatly widened, till now ether

intoxication has crossed the Irish Channel, and I have, even in London, numbered cases among my professional *casualties*. Labor is more rapid in its intoxicating effects than alcohol. The ether inebriate can get drunk and become sober again three times for one alcoholic "drunk," and at a much smaller expense. You can be drunk three times a day for sixpence. Inflammation of the stomach is not uncommon, and fatal cases occur.

Chloral has been a favorite draught for purposes of intoxication, especially during the past fifteen years. It is greatly in favor with both sexes, especially with the educated and intellectual. A considerable number of deaths have occurred, but unfortunately this habit is advancing by leaps and bounds. Those persons who are afflicted with sleeplessness, as well as those who suffer from agonizing pains, are especially liable to be overcome by this anæsthetic. Chloral is a sedative, powerful, and dangerous substance, and too loud a note of warning cannot be sounded as to the imminent risk involved in even a "moderate" use of this subtle soother. It is a standing disgrace to our legislature that druggists are allowed to sell so lethal a poison in the innocent guise of an elegant syrup, whereby many individuals in search of relief from wakefulness and pain are induced to tamper with this deceptive and destructive inebriant.

There are many other similar forms of inebriate disease, the most conspicuous of which are chloroform and the recently discovered cocaine; the latest eminent victim of which latter was a celebrated French actor, in whose rooms there were found after his premature death, enormous quantities of the drug.

All these and other allied forms of the disease may exhibit the general forms of periodicity or continuity. Inebriates may be either periodical or habitual. In my own private professional experience the periodics have been slightly more numerous than the habituals, but in the New York Port Harbison Home and in the Dufurmpie Home at Rickmansward, the proportion has been reversed, probably because

such patients have consulted me at an earlier stage of their inebriate career than they usually do when applying for admission into a home; for periodicity is often the beginning of the inebriate's alcoholic course which so frequently ends in habitual drunkenness.

There are a variety of inebriate periodicities. The most patent are seen in the various phases of female inebriety. The different crises through which women pass, such as puberty and maternity, afford marked examples. The periodical inebriate outbreaks may be daily, every second, third, or fourth day, once a week, once every fourteen days, once every month, or every two, three, or more months. Besides this chronological periodicity, there are periodicities of occasion (such as the pay-day, either weekly of workmen, or once a quarter or half year as in the case of pensioners and annuitants); of season (some inebriates being most tempted and excited in summer, others in winter, etc.); of atmosphere, some being provoked to a paroxysm by the keen east wind; of commerce, as after the exhaustion and bustle of the foreign mail-day, or stock-taking; and of voyaging, as in the excitement prior to embarking and the excitement on approaching land, two types of seafaring periodically very frequently exemplified among sailors.

The premonitory symptoms of a periodical outbreak of inebriety are often so markedly indicative of a disorder of function and a diseased state, that long observation has enabled me in many cases to foresee and prevent the outbreak. There is a longer or shorter interlude of extreme irritation, suspicion, and unrest, accompanied usually by depression of spirits, a feeling of sinking in the region of the heart or stomach or abdomen, and it may be by trembling. A striking feature (first reported by Mrs. L'Oste) is a very general spasmodic gulping down of food, especially of liquids.

The habitual or constant form of inebriety is somewhat different. The periodic drunkard is consumed with an internal and overpowering impulse to become intoxicated,

from disorder of the system other vital process, from nerve power, or from intellect. This method, denaturing, spasmodic impulse passes like a convulsion within, altogether independent of the system's consent; and when the storm has passed, either by intoxication, or, on forcible prevention from drinking, by having spent itself, the inebriate complacently goes on for the time, and the subject remains perfectly sober and free from any desire to drink till the next period of inebriate excitation.

This is a true state of disease, a condition of disordered function.

The habitual drunkard presents a more developed and continued phase of this diseased mode. In the transition stage from a wife to chronic inebriety, nothing very extraordinary may be detected in his conduct. But all is not well. He is never "drunk" in the common acceptance of the term, but if an student is more eloquent, more pathetic, more soul stirring than ever; if a merchant, more grandiose in his projects, more sanguine in his calculations, more reckless in his speculations. On great occasions the impassioned speaker, and in the height of suspense before the issue of a brilliant financial *coup*, the operator studies himself with fervent thoughts of the anæsthetic alcoholic mocker; but his reactions are more profound than ever before, and nervousness, flightiness, suspicion, and irritability, with alternate exaltation and gloom are the portentous harbingers of confirmed drunkenness.

In this transition, neither thoroughly drunk nor perfectly sober, inebriation, though the inebriating drinker feels nothing amiss, and is deluded with the belief that he is stronger, more self-possessed, and healthier than he had ever been in his life, he is really and truly weaker, less master of himself, and in a worse state of health. His heart and circulation are weakened, weighed, and weakened; his clear vital organs are loaded, galled, and distressed; his blood is vitiated, his brain is oppressed, and his mind somewhat deranged. His feelings he must have a good dose of

alcohol to pull him together. This—the experience of many a so-called "moderate drinker" who feels proud of his ability to "tempor himself" and "to know when to stop," who rejoices that he is not a drunkard, and has no need to be a teetotaler, who uses but not abuses "the good creature," and who is "sober in mind and limb than any abstemious alive"—is not a normal state. It is a disease, not a gift. He is on the brink of a precipice, with a lessened capacity to walk along the edge, and while in this unsteady, perturbed state is peculiarly liable to meet with an accident, or go down with impaired power of recovery before some ordinary attack of illness which, when quite healthful, he could either have escaped or thrown off with impunity.

As time wears on, alcoholic indulgence may, by the repeated irritation, disturbance, paralysis, and benumbing, so imperceptibly, though surely, degenerate the brain and nerve substance, with their membranes, apart altogether from other tissue degeneration produced by alcoholic poisoning, that the whole being is, as it were, in one long agony, which by night and by day calls for relief in the evanescent oblivion of intoxication. These degenerative physical alterations of structure may steadily extend till paralysis and rapturous imbecility drop the curtain on "the last sad scene of all" in a once happy life, but now wasted life.

What are the causes of the disease of inebriety? A great statesman once said in the House of Lords, "The cause of drunkenness is drinking." This is not accurate. Drinking is *one* of the causes, but it is often only the means whereby intoxication is obtained. Besides, eating, not drinking, is sometimes the cause, as well as at other times, also a cause, as in the smoking of opium.

The causes of inebriety may be conveniently ranged under two divisions, the Predisposing and the Exciting.

The former are the conditions which go to make the individual peculiarly liable to be affected by the disease. This

inebriate predisposition may relate to sex, age, religion, race, climate, education, pecuniary circumstances, occupation, marriage relations, heredity, temperament, injuries, diet, and hygienic conditions, and intoxicant articles.

For example, as to age, the greatest liability is between thirty and forty years of age; as to religion and race, the Jews are as a rule remarkably free from the disease; as to culture, education and refinement, strongly predisposed as to occupation, employment in the liquor trade shows an enormous predisposition. Heredity largely preponderates, so much so that in almost one half of over a thousand cases I have been able to trace a clear history of inebriate inheritance. Parental was the most frequent, but there was a goodly show of inebriate grandparents, brothers, sisters, uncles, aunts, etc. I have no doubt that, if an accurate family history of each case had been forthcoming, a much greater preponderance of inebriate heredity would have been revealed. The heredity in accessible small ratio of cases has been insane. Insane parents are apt to beget inebriate children, and inebriate parents to have mentally unsound offspring. There are many varieties of the inebriate inheritance. There is extreme susceptibility to the action of narcotics, the child becoming drunk on his first tasting strong drink. There is the inebriate impulse from inherited weakness of physically defective brain or nerve function. There is the direct transmission of an almost overpowering tendency to excess. There is transmission of heredity, one child of an intemperate parent engaging a kind, abstemious father, and a third an epileptic fourth, and so on. There is the descent of alcoholic lesions before, or upon, as of an inherited liver or an unstable brain, a weakened power of resistance and control, or a defective *morale*. The heredity may be transmitted from one or both parents, or inebriate

themselves, and in many cases with no suspicion of an inborn alcoholic habit, a prolonged continuance of daily limited drinking gradually sets up a strong and ever-growing necessity for more frequent and deeper narcotic draughts. The disease of inebriety is frequently the product of steady, long-persisted-in "moderation."

Such are some of the causes which predispose to this malady. There are also many causes which excite to drunken excesses in constitutions predisposed thereto.

Nerve shock is the most prevalent exciting cause. In my experience this has so operated in fully one-third of the cases. Domestic trouble, business worry, sudden loss of fortune or sudden accession to wealth, extreme grief or extreme joy, bereavement of a dearly loved relative or friend, and more gifted ailments, are varieties of nerve shock provoking to the inebriate paroxysm.

Traumatic inebriety is very common—that is, inebriety as a result of "blow or violence." Espially, foot being injured is this sense observed, such as the cruel skull-bashing I have seen exhibit symptoms follow a very slight head injury.

Dyspepsia, rheumatism, gonorrhea, heart disease, syphilis, epilepsy, and insanity, often excite the predisposed to a drunken outburst. Exhilaration from water-cure is apt to be similarly.

Among the other excitants to inebriety are hysterical crises of sex, the full cure of such crises, as those of menstrual moon, a too early marriage, nervousness and overstraining, medicinal and overpressure, and nerve time. Exhilarating substances also take a tendency to excite to inebriety. Alcohol is so powerful an excitant that a very small dose of fermented wine or beer, or spirit, administered after meals, and the more sign fermented when at the State

of inebriety, will often, by exciting more the susceptibility of the occasion, making no mention in the above list of propensities of the symbol, would do well to bear in mind that they

cannot use an intoxicating material for sacramental purposes without some risk of exciting some communicants to an outbreak of drunkenness.

From all these, as well as from many other particulars about inebriety culled during a somewhat prolonged experience of such cases, it will be apparent that inebriety is a true disease demanding recognition and appropriate treatment. Except in medical circles I am unable to discuss the therapeutics of this disease, but I am at liberty to lay down the general lines of sound treatment.

First, and most essential, there should be an entire discontinuance of all intoxicants, immediate in the case of alcohol and gradual with opium. The abstinence should be absolute, with no exception on the score of physic unless in an emergency involving life when no other suitable medicine is available; and no exception at all on any ecclesiastical or other plea. In persistent abstinence alone is there safety.

The physical damage wrought by the poison on the system should be repaired and the original factors in the origin of the disease should, if possible, be unravelled in order that the pre-indebriate unhealthful condition conducing to inebriety may be rectified. The resting power and the will should be strengthened by the building up anew of healthy brain and nerve tissue, by suitable occupation, by intellectual and elevating pursuits, and the moral tone cultivated and raised by the ennobling influences of moral and religious considerations.

In many cases there is will-power enough left to secure the quoniam drinkard's steadfastness in abstinence, and with such the beneficent work of teetotal societies, especially when supported by the invigorating aid of the highest religious motives, has achieved a vast amount of success. The abstinence movement is founded on principles consonant with the true teachings of physiological science as to the efficiency of the temple of the body.

But there are inebriates without number whose brain and

higher nerve-centers have been so seriously damaged that their will has become as paralyzed as their moral sense has become deadened; who are of the most pronounced type of narcotics. For these, as for not a few of the former class, who yet are so desirous to be saved from themselves that they are willing to surrender their liberty for a time in the hope of cure, a prolonged sojourn, under scientific treatment, in a genuine home for the cure of this disease is the only human hope of deliverance. The law has done some little, but we still lack a national provision for the therapeutic treatment of poor inebriates as we now provide for poor lunatics; we still urgently stand in need of legislation for the involuntary detention and care of all such narcotics, be they rich or be they poor, who are so under the ineluctable domination that they have neither resolution nor power to strike a blow for freedom.

Our present legislative treatment of these diseased ones is wasteful, disgraceful, and unjust. We have a huge government-training school of inebriety, as much as we imprison the drinkard after he has become drunk and can drink no more for the nonce, keep him in seclusion from intoxicants just long enough to recover from the effects of a debauch, and then we send him forth again into the world once more fitted to indulge to excess. We left him in a teetotal clubhouse, the only victims on whom punishment falls being the sorely-afflicted wife and children, whose sustenance has been taken from them by our imprisonment of their bread-winner.

All this calls aloud for reformation. Once let the community comprehend the relations of the disease of inebriety to the temperance movement, once let the friends of abstinence realize the physical as well as the moral and religious aspects of intemperance, the great cause in which we are associated together, under the auspices of the National Temperance League will then take a giant stride forwards; reformation and not penal provisions will be the result; the sick inebriate will breathe through all our legalized dealings with the sick inebriate; the Christian church will clear herself of

all complicity with the temptation of the reserved from strong drink to relapse and ruin, by banishing all intoxicating wines from her sacred precincts; the State, recognizing that prevention is better than cure, and that the first duty of good government is to preserve order, health, intelligence, and life, will either prohibit the common sale of all such beverages as promote disease, crime, and premature death, or invest the people with the power of rooting out so deadly a center of a common danger, a common menace, a common and a shameful reproach to our country and to our race.

PARALDEHYDE IN INEBRIETY.

Dr. Gordon, Professor of Materia-Medica of the University of Aberdeen, recently studied the action of paraldehyde, and reached the following conclusions: As a hypnotic in all cases of cerebral disease and nervous irritability, its action was prompt and prolonged; no stage of excitement, and no headache, depression, or indigestion followed its use. While it diminished the frequency of the heart's contractions, it seemed to strengthen the beats. It is not a cardiac depressant. It has no marked period of toleration, and has been given for months with equally good results. No marked craving for the drug has ever been noticed from its long use. In many cases it is a laxative for the bowels. An increased secretion of urea follows its use. It does not have any effect on the temperature. The reflex excitability of the spinal cord is rapidly diminished. The peripheral nerves are also markedly controlled, and the motor nerves are influenced profoundly. In large doses, complete narcotism of the nervous system follows. From this it will be clear that as a narcotic, when alcohol or opium is taken away, it has a peculiar value. At present, the use of it is difficult in persons who have a sensitive stomach, and some art is required to disguise it so as to be palatable. Paraldehyde comes very near being a perfect remedy for the insomnia and neuralgia that follow the withdrawal of opium and alcohol.

A SKETCH OF THE LIFE OF JOSEPH PARRISH.*

By PAUL R. SHIPMAN.

The subject of this sketch, and the object of the honors bestowed in the dinner whose proceedings are recorded elsewhere in these pages, was born in Philadelphia, Pa., November 11, 1818. Of Welsh-English descent (English in the paternal line, Welsh in the maternal), he is the fifth son, as well as namesake, of Joseph Parrish of Philadelphia, the famous Quaker physician, whose noble professional career and unspotted life closed together just half a century ago. His mother was Susannah Cox, only daughter of John Cox, a prominent minister of the Society of Friends, and founder of the Oxmead homestead, a beautiful estate in the vicinity of Burlington, N. J., which became the patrimony of the Parrish family through the marriage of the elder Parrish with the daughter of the house. Having mentioned his parentage, it is almost unnecessary to say that he was born a philanthropist, and quite unnecessary to add, in view of his achievements, that he has fulfilled the "promise and potency" of his birth.

Joseph Parrish, the younger, received his academical training in the schools of the Friends in his native city, supplemented by a classical course under the direction of private tutors; so that when he made choice of a profession he was well equipped for the study of it, which he pursued in the medical department of the University of Pennsylvania, from which he graduated with honor in 1844. Meanwhile, in February, 1840, entering the temple of Hymsen before that of Esculapius, he married Lydia Gaskill, the amiable and accomplished daughter of an honored citizen of Burlington, N. J., and subsequently during the same interval made a slight trial of agriculture, which, however, proved un congenial and generally disappointing. Receiving his diploma,

* Read before the Society for the Study and Cure of Inebriety, at a Dinner given in honor of Dr. Joseph Parrish at Burlington, N. J., November 11, 1889.

he established himself in Burlington, the native city of his wife, where he soon acquired a large practice, including that of physician to the Burlington College and St. Mary's Hall, the latter a female seminary that rose to celebrity under the supervision of Bishop Doane, then in the zenith of his fame. The *reputation* of the young practitioner, already large, was steadily enlarging. He now had the professional hall at his feet.

At the beginning of his practice he fell in with a case that brought him out in an amusing way his strong point as a man and physician. An individual from Tickerton, N. J., evidently under some hallucination, called at the office one day, and proceeded with a very ingenuous face to describe his case, which he seemed to regard as well nigh hopeless. "I think I know what ails me," he said spherically, "but I can't find a doctor to agree with me, or tell me what to take. I have heard of you, Dr. Parrish, and I come to see if you can't do something for me." "Well," said the doctor, taking in the situation at a glance, "what ails you?" "Why," he answered, "I think I've got a *pin in my back*." "You are right," declared the future master of nervous pathology, "that is exactly what ails you, and I will give you something that will cure you," which he forthwith did, in the shape of that magical nerve known in the unoffical dispensary as *brain pill*, and, it is needless to say, with the happiest results, the patient retiring elated, profuse in his praise of the doctor's superior sense, and never afterwards suffering a relapse that did not promptly yield to the same remedial agent. "An ounce of mother-wit," says the German proverb, "is worth a pound of school-wit."

Dr. Parrish is a great and enlightened physician, but from the first the spirit of the healer has had to divide possession of him with the spirit of the teacher, in obedience to which he set on foot in 1847 *The New Jersey Medical Reporter*, which he conducted with such judgment and ability that it was hailed at once as a power in the literature of the profession, and became ere long the official organ of the Medical Society of the State. In the course of a few years, however,

owing to failing health and the pressure of more imperative engagements, he associated with himself in the conduct of *The Reporter* Dr. S. W. Parier, to whom eventually he transferred it, and who in 1860 removed with it to Philadelphia, where, having dropped its geographical addition, it now flourishes as *The Medical and Surgical Reporter*. A periodical that was started nearly fifty years ago and is going yet must have started under a pretty vigorous impulse.

In 1854 Dr. Parrish, at the urgent request of the Philadelphia College of Medicine, backed by the solicitation of his Philadelphia friends, accepted reluctantly the Chair of Obstetrics and Diseases of Women and Children in that institution, and removed with his family to Philadelphia. Unhappily his feeble health and drooping energies presently justified the strong misgivings with which he had accepted the chair, constraining him to resign it after occupying it one term, and resort, accompanied by his family, to the softer airs of the South, where he spent the coming winter. Deriving no benefit from this change of climate, and suffering from a pulmonary complaint that threatened the worst, he returned home at the opening of spring, and in May sailed with his wife for Europe.

His time abroad he passed mostly in England, France, Switzerland, Italy, and Scotland, visiting these countries in the order in which they are here named. Devoting the summer to England and France, he in the course of the fall went to Switzerland, whose dry and rarefied air proved so nearly fatal to his pulmonary complaint that it easily received the *coup de grace* from the next stage of his itinerary, which was no less than the passage of the Alps amid the wholesome rigors and stimulating glories of the Alpine winter; so that when he descended into the plains of Italy he was himself again. And this was particularly fortunate for him, because when he got to Rome, what with inspecting hospitals and asylums, expostulating with the authorities in charge, calling on the Prefect of Charities, interviewing Cardinal Antonelli, and memorializing the Pope, his ruling spirit gave his body so little rest that if it had not recuper-

ated in Switzerland it might not have recaptured at all, although, as the outcome of this reformatory zeal, it should be said, the Cardinal was impressed, the Pope acknowledged himself "graciously indebted to the young American for his kindly and judicious interest" (conveying the acknowledgment through Ex-President Fillmore, then in Rome), and, most significant of all, the abuses which had aroused the young American's "interest" were, upon formal examination and due inquiry, thoroughly reformed. If Switzerland had done him good, he in turn did good to Italy; and the account current between him and the Old World, when he left its shores for his home in the New, was balanced.

On returning to his native city in the spring of 1856, with health renewed and aspirations intensified, Dr. Parrish, not unnaturally, was eager to resume the practice of his profession, as he might have done under the most favorable auspices; but his friends, recognizing that he was larger than his profession, recognizing, in other words, his preëminent fitness for organizing and administering as well as moulding and inspiring institutions, pressed him to reserve his abilities for that great but comparatively uncultivated field; and to their persuasion he with some hesitation yielded, narrowly escaping the fault (matching that imputed by Goldsmith to Burke) of giving up to profession "what was meant for mankind."

A gateway to this new field, as it happened, stood open close at hand. Certain humane Philadelphians, with the late Bishop Potter of Pennsylvania at the head of them, had recently secured a charter authorizing the establishment of a Training School for Idiots, which they had duly organized, and which, complete in body, lacked nothing but an informing spirit to make it a living thing. In these circumstances the directors turned to Dr. Parrish, voluntarily tendering him the office of superintendent, which, after much consideration and a personal inspection of the premises, he accepted, and breathed into the lifeless institution the breath of life, to such good purpose that its excellence was speedily recognized, not

only by the State of Pennsylvania, but by New Jersey and Delaware, all of which, as also the City Councils of Philadelphia, made liberal appropriations for its support. He had passed through the open gateway, and stood triumphant in his proper field.

The prospect was ritted to thrill him with manly pride. What he felt may be inferred from a passage in an educational address which he delivered at this period. "Within the last quarter of a century," he said, personifying education, "she has sought for mind in the idiot, and her search has not been vain. With the light of Christianity to guide her, and the genial influence of philanthropy to cheer her, she has gone down into the lowest depths of human existence, seeking for the feeblest sign of intelligent life. When her hand touched it, it grew warm. When she spoke, it stirred in its solitude. When she said, 'Awake! I tremble. When she breathed upon it, it nestled towards her. When she took it to her bosom, it whispered faint desires. When she lifted it up to the light, it smiled. When she led it forth, it praised her; and into all civilized lands the word has gone out that education can reach not only the dumb, that he may speak, and the blind, that he may see, but the idiot, that he may stand up and say, 'I am a man.'" Who can wonder that the author of this exquisite passage came off successful in the province to which it refers? He found the gateway to his field open, but it mattered not; if it had been shut and triple-locked, he bore the key that would have opened it—the charmed key of insight penetrated by sympathy.

In 1863, the school having long before cleared all breakers, and its course being smooth, Dr. Parrish, against the protest of the directors, resigned the office of superintendent, and entered the United States Sanitary Commission, rightly deeming that, as between children of the same land, patriotism is the highest philanthropy; and, without qualification, service of one's country the first of civil duties. The school, however, it is a pleasure to state, exists to-day in unabated prosperity.

As a member of the Sanitary Commission, Dr. Parrish's services, it will be readily imagined, were of surpassing value. "He first acted," says a memoir of him published in 1874 in "Representative Men North and South," from which, by the way, the facts of this sketch are partly drawn, "as an inspector of the camps and hospitals in the vicinity of Washington; and here he labored zealously to make himself acquainted with the actual wants of the soldiers. When the government required more help in the procuring of supplies, Dr. Parrish was delegated to travel through the principal towns of Pennsylvania, and of some other States, holding public meetings, and organizing aid societies. About this time he also edited the *Sanitary Commission Bulletin*, in connection with his other services, and so successful was he in organizing societies for the manufacture of garments, and the collection of supplies, that he was requested by the Sanitary Commission Board to visit the governors and legislators of the loyal States, and endeavor to unify and concentrate the work of this important auxiliary to the government, which he did, with very gratifying results. To complete his good work, the doctor made an extended tour to numerous camps and hospitals within the Union lines in the West and South, under a full commission from the President of the United States. He was always to be found wherever and whenever there was suffering humanity to be attended. He visited Nashville, Lookout Mountain, Chicamauga, New Bern, and other intermediate places, looking after the sick and wounded, and distributing the supplies of the people through the authorities of the government. For some months he also took charge of the supply stations at White House and City Point, where he received from the Commission whole cargoes of clothing, ice, and hospital stores, for gratuitous distribution. Mrs. Parrish accompanied her husband in several of his expeditions nearer home, besides which she was herself in charge of the stores at Annapolis, Maryland, where she contributed not a little by her own personal attentions to alleviate the sufferings of both Northern and Southern

sick and wounded. She also prepared a very large edition of a little volume called the *Soldier's Friend*, containing directions how to find the Rests and Lodges of the Commission, as also a choice collection of hymns for gratuitous distribution among the soldiers. Fifty thousand of these were printed by the Commission and distributed gratuitously in the army and navy."

These invaluable services, it may be said with truth, were rendered not so much to a cause as to humanity, embracing both parties to the conflict, so far as possible, even while it lasted, and, when it ended, extending at once to the soldiers of the South and North alike, and generally to the necessitous of both sections without distinction, not omitting by any means the innocent occasion of the strife, who in the hurry of the moment realized only that he had lost one master without finding another or becoming his own, and in reality was a much fitter object of compassion than either of his white rivals in distress. The day following General Lee's surrender, Dr. Parrish, accompanied by his younger brother Edward, entered Richmond, Va., where he established a station of the Sanitary Commission, and supplied it with hospital stores for the benefit of the two armies, charity and peace in his person installing themselves in the headquarters so lately occupied by enmity and war, and sending forth, instead of the messengers of carnage, the ministers of sympathy and of hope.

This public office discharged, and no other claiming his attention, he yielded to the impulse of private attachment, and with his brother hastened to Fredericksburg, in the neighborhood of which lived, at the outbreak of hostilities, a friend of his, a large slaveholder, at whose house he had frequently been a guest, and with whom at the beginning of the struggle he had exchanged letters, and at length, agreement being impossible, parted not in anger but in sorrow. The incidents of this visit are so interesting and impressive, and reflect so much honor on all concerned, and indeed form so characteristic and memorable a scene of the new-born

peace, that no apology is made for pausing to record them even in a running sketch like the present.

Arriving at Fredericksburg, Dr. Parrish drove out with his brother to the home of his friend, some five miles from the city, reaching there late in the afternoon. Desolation and sadness were written all over the entrance and its surroundings, and the house being tightly closed, it became a question with the visitors whether or not any one occupied the premises. On the doctor's knocking, however, the familiar face of the old black Aunty met his gaze as she opened the big door very cautiously, apparently fearing intruders. He having been, as already mentioned, a visitor there in years gone by, she knew him, and, calling his name, hurried to announce his presence. Enemy though he had been according to the laws of war, no one could have been more warmly welcomed by the good mistress of the house, who lost no time in summoning her husband and family. It was a joyful meeting all round. Edward Parrish, gentle, sympathetic, loving and lovable, took the children to himself, and, in concert with the hostess, filled up a few hours of the evening with laughter and merriment, such as they had not known for some time. The doctor and his host spent most of the night in getting hold of the situation of the latter's affairs, and especially of his relation to his slaves. They finally reached a conclusion, and it was agreed between them that the doctor, next morning, should communicate it to the negroes called together on the lawn to hear it.

At an early hour in the morning, accordingly, the horn sounded, and the negroes gathered on the lawn, about fifty in number, old men and old women, young men and young women, single and married, but not many children. Most of them were field hands. With the house servants only was the doctor acquainted. The business was opened by his friend, who in a few words gave his people to understand that Dr. Parrish had something to tell them, which he knew they would be interested to hear. He then took his seat on a log, and seemed immersed in thought. It was a crisis in his life:

impoverished by the war, so far as ready money was concerned, yet with plenty of land—with only one mule left, and but few implements—his laboring force free and at their own disposal, and what they would do or say a matter of doubt even to themselves. Some of the negroes sat upon the grass, some leaned against the trees, some, and especially the young men, stood upright, with folded arms and an air of independence that betokened a conception, more or less clear, of their new relation to their former master and the world they had never seen beyond the bounds of their home. Dr. Parrish was impressed (as who could have helped being?) by their behavior. It was quiet, respectful, polite, but indicative of something stirring within them to which they had been strangers till now, and which made them doubt and hesitate. They were "in a strait betwixt two," not knowing which way to go. He, also, was in a strait, hardly knowing how to begin or what to say, besides the bare proposal he was authorized, on behalf of his friend, to lay before them. But the duty was upon him and must be done.

"My friends," he said, "many of you know me, and where I come from, and I feel sure that you will listen carefully to what I say. And when I am done speaking, I want you to speak, and tell me what you think of my friend's offer to you, which I shall tell you about in a few minutes. You all know that we have had a dreadful war between the North country and your country here in the South. The soldiers on both sides fought well. They were all brave men. The women and children were brave, too—brave in giving up comforts they had been accustomed to, and submitting to hardships they never knew before. Thousands of soldiers were killed on both sides, and scarcely a family lives that has not wept for lost ones. As to the colored people, I want you to know that you are much better off than many of your color. They have been scattered in different places, and taken away by the soldiers, and pressed into the army, to cook, and drive, and serve in various ways. You have been kept together—thanks to your master and mistress for that. Your cabins,

and your little stock of whatever you had, have not been disturbed, and I find you here around the old home yet. Now, I want to read you what the President of the United States has sent all over the country to be read by all the people. [Here he read the Proclamation of Emancipation.] By this paper, under the rules of war, you are free. My good friend there does not own you any longer, as he did before. You can go out to the great, big, strange world, and shift for yourselves. And if you like you can stay where you are, if you will accept of what he offers you. Now listen, and listen carefully. My friend says that he has no money to pay you wages at present. He is poor like yourselves, but he has land — he still holds this beautiful plantation, with all its dwellings, and barns, and tobacco-houses, and all. There is some bacon in the smoke-house, and a few hams. You may keep your cabins, your pigs, and chickens, and you shall have a share of the corn and bacon, but no wages, now. If you will stay on as you have been doing, put in the crops, and harvest them, you shall have wages when the crops are sold, and wages for the time between now and then. Now what do you say to this? I want you to speak, and say just what you think, and my friend will hear and understand you."

A long pause ensued, perhaps five minutes, when an old white-headed man stepped forward, and, addressing his master, said: "Marse Jeems, I hys wid you fadder and modder, when you was baby. I done kar'd you in my arms. I had you, and keered for you. When you growed bigger, I tuk you ter de corn-field on de ole mule, and you was neber hurtid. You and me has neber parted from dat day to dis. And now dat sorter has kum'd ter you and de missus, now dat de crops don't grow, and de ole place look bad, is I gwine ter lebe you? No, no, Marse Jeems, I is not!" Then turning to Dr. Parrish: "And you, doctor, dat kum here ter tell us we am free, and dat we kin go, if we wants to, I say, tank 'ee! you am good to say dis; but Marse Jeems, and de missus, and de chillun, am here yit — dey sort o' long to me and us ole fellers — and we is gwine ter stay." And so said they all;

and stay they did, for the remainder of the life of the doctor's friend, who to them was always "Marse Jeems."

Returning from this mission of friendship, Dr. Parrish wound up at last his humane and patriotic labors by visiting, in company with his wife, the principal cities of the South, for the purpose of inspecting the schools established there under the direction of the Freedmen's Commission, and reporting the facts concerning them; which purpose, it need not be said, he accomplished with fidelity and thoroughness. The terrible crisis was over. He had discharged his whole duty to his country; and, with an approving conscience and invigorated constitution as his ample reward for the priceless service, he was free to turn once more to his chosen field. He had answered generously the trumpet-call of patriotism, and now, the republic saved and liberty secure, he might hearken again to the proper voice of humanity.

His ear, as the reader will anticipate, quickly caught the well-known accents; and his heart, linked as of yore with his head, straightway made the old response. Before the echoes and reverberations of the shock of battle had died away, Dr. Parrish originated the movement developing into "The Citizens' Association of Pennsylvania," which in June, 1876, was incorporated by the legislature of that State, for the purpose, as declared in the charter, of "establishing a society for the reformation of inebriates, and for the moral and social elevation of the ignorant and neglected classes." Of this association, composed of leading Philadelphians, Dr. Parrish was the president, as he had been the originator, and henceforward became the organ, as well as executive, obliged indeed to embody in himself, whether he would or not, the active forces of the organization.

His first official act on behalf of the association was an address to the people, denning the end immediately in view as "the purchase of lands and erection of buildings for the cure of the intemperate," stating the method proposed for "the cure of the intemperate," with the philosophy of the method, and, finally, appealing urgently for "sympathy and

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Dr. Parrish and his colleague, on arriving at London, appeared before the committee, at intervals, for two weeks, a stenographic report of their testimony being taken, and published as a Parliamentary document. The views they expressed in the course of their testimony, and which their testimony sustained, were unanimously adopted by the committee in its report, and subsequently, under the direction in large measure of Dr. Dalrymple himself, carried into effect. The American delegates, it should be remembered with pride, reflected credit on their country, as well as on the association that sent them. The association, it is certain, with the movement which it leads, scored a distinct triumph.

Shortly after the close of this mission, Dr. Parrish, without his knowledge, was appointed by the President of the United States, an *ad hoc* commissioner, to negotiate a treaty with the hostile Indians north of Texas; but in consequence of the illness of his wife declined the appointment, persisting in his decision in spite of repeated solicitations to reconsider it. Ultimately the appointment was conferred on his brother Edward, mentioned above, who accepted it, but unfortunately did not live to return home, dying among the Indians whom he had quitted. Not long afterwards, as may be remembered, they sent to Washington a great delegation of their chiefs, who, after doing homage to their great father the President, visited Dr. Parrish at Media, to pay their respects to him as the brother of their mediator, and relate the incidents of his brother's death, which one of the principal of them did, in pantomime, with marvellous distinctness and vividness. Dr. Parrish received the chiefs with a short speech, happily pitched in the key of aboriginal eloquence, which they interrupted more than once with profound grunts of approval, and at its conclusion responded to it in the same key, although an impartial judge, one may be pardoned for thinking, would have pronounced the doctor's feigning remarks more Indian than those of the Indians themselves. The occasion, however, is noticed here chiefly on account of the sorrowful event that brought it about.

In the fall of 1872, the trustees of the Maryland Inebriate Asylum at Baltimore, Md., called on Dr. Parrish to take charge of that institution, which, though chartered in 1860, was still on its first legs, that bade fair to prove also its last ones, being unknown, distrusted, and all but insupportable. However, he consented to take charge of it temporarily, without relinquishing the superintendency of the Pennsylvania Sanitarium, and continued in charge of it for two years, at the end of which the Asylum, no longer unknown or distrusted, was seated in new and beautiful grounds, housed in commodious and tasteful buildings, and filled with inmates. He left it on the highway to permanent success.

Dr. Parrish in 1876, after the lapse of nearly a quarter of a century, returned with his household to Burlington, N. J., which is now his home, and in all likelihood will continue to be, until he goes to his last home; whither, alas! his estimate and devoted wife preceded him five years ago. In the shadow of his bereavement, and possibly thinking to assuage his own affliction by the congenial occupation of removing the afflictions of others, he opened in Burlington a private institution, known as Parrish's Home for Invalids, to which are admitted a limited number of the milder class of nervous patients, and which presents notably the aspect of a refined and luxurious home, as it is animated by the spirit of one. It fills his ideal of a remedial establishment. A few months later, doubtless influenced still by the two-fold motive that gave birth to it, he visited England on a tour of inspection of similar establishments, and while there was honored with a reception at the Dalrymple Home, by the British Society for the Study and Cure of Inebriety, of which the distinguished Dr. Norman Kerr is president; the invited guests numbering about a hundred, and including members of the nobility, of the army, and of the clergy, as well as of the medical profession. In receiving Dr. Parrish the president of the society made a congratulatory address, closing with a resolution of welcome, which, after being seconded by one of the most eminent members of the profession in Great

Britain, and supported in laudatory speeches by representative guests, was passed with cordial unanimity, and of course suitably acknowledged by the recipient of the honor. Dr. Donald Dalrymple, said to say, for whom the Dalrymple Home was named, and whose tour in this country has been referred to, had meantime been numbered with the dead. Dr. Parrish, none the worse but rather the better for his trip, returned home in the spring of 1886.

Some year and a half later, in June, 1887, he visited England once more, this time as a delegate of the American Association to the Colonial and International Congress on Inebriety in London, having as his colleagues in the delegation, Dr. T. D. Crothers of Hartford, Conn., secretary of the association, and editor of its organ *THE QUARTERLY JOURNAL OF INEBRIETY*, and Dr. T. L. Wright of Ohio, author of a profound and striking work entitled "Inebriism." The day before the meeting of the Congress, the British Society gave to Dr. Crothers, in the rooms of the Medical Society of London, as it had previously given to Dr. Parrish at the Dalrymple Home, a public reception in consideration of his services to the cause, Dr. Parrish being present as an honored guest, and making a graceful speech in acknowledgment of the compliment worthily bestowed on his distinguished colleague. At a meeting of the Congress which followed in Westminster Town Hall, Dr. Parrish presented a paper on the question "Is there a Climacteric Period in Inebriety?" which, permission being granted, was read by his friend and companion, Mr. W. E. Schemmerhorn. The paper was short but pregnant and suggestive. During his stay in England he received numerous marks of respect from the press as well as the profession. The American delegation as a whole, indeed, was the object of especial attentions. He came back late in the summer, completing safely and agreeably a voyage which, in view of his impaired health, was not without some hazard.

It may be worth while to state here, what was shut out above by the sequence of more important things, that Dr.

Parrish was invited, as an expert on insanity, to attend the autopsy of Guttaeu, and when he failed to appear was summoned by telegraph, with the assurance that the examination should be consent to come, would be deferred till his arrival; but he declined to attend.

Dr. Parrish has no children alive. A son, full of promise, died in childhood; and a daughter, Mrs. Charles S. Welles, of Elwyn, Pa., his only other child, departed this life in 1879, leaving a daughter, now some ten years of age, who is his sole lineal descendant living. This child was present at the late banquet to her grandfather, as the guests must well remember, for she played among them like a sunbeam.

In the course of the last year or two, Dr. Parrish, finding routine irksome, and feeling more and more the need of freedom from care, resigned the active professional duties of the Home to his nephew and associate, Dr. Wm. G. Parrish, devolving at the same time the duties of supervision on Mr. Samuel Parrish, his youngest brother, and indeed the youngest of the family, albeit he himself, vigorous and bright as he is, has entered upon what Victor Hugo calls "the youth of age." Dr. Parrish, it is true, remains physician-in-chief, but his services, as befits his years, are consultative rather than operative, leaving him at liberty to indulge without restriction his tastes for literature and philosophy, for the society of friends, and in general for that ease with dignity to which he has so richly earned the right. He sits in the evening of life under his vine and under his fig-tree, where not only are there none to make him afraid, but all vie with each other in filling his cup of joy. That which should accompany old age, and which none but the good may look to have, is his in flowing measure,

As honor, love, obedience, troops of friends.

An estimate of Dr. Parrish's character and intellect does not fall within the scope of this imperfect sketch. Yet a word or two on this head may be pardoned. Dr. Parrish incorporates the cardinal virtues, but perhaps the trait of his character to which he owes most, and the world after him, is

sympathy,—a sympathy manly, penetrating, true—a sympathy that raises instead of lowering the self-respect of its object—a sympathy, in fine, that is not pity so much as love. He is a man of strong and trained intellect, but his most potent intellectual trait, if the opinion may be hazarded, is common sense—common sense in an uncommon degree. Combine these two traits, vitally, and we have a fair working definition of genius. We at any rate, it is submitted, have the chief agency by which Dr. Parrish has achieved the beneficent work of his life. To it may be ascribed, in greater or less measure, his rare gift of comprehension, grasping intuitively the central point of a question—his rarer gift of expression, lodging his thought in the minds of others so simply that it seems not his but their own—his power to attract men, vitalize great enterprises, and conduct them to fruitful issues. It runs through his life like a golden thread. The jewels of his fame are strung on it.

But there is one thing about Dr. Parrish, both as a speaker and writer, it must be owned, that can hardly be traced to this source, lying deeper in his mental and physical organization. And it is a very captivating thing. It is that force without effort from which his readers or hearers instinctively infer a reserve of force that puts them at ease with him and with themselves. At the intellectual feast which he spreads no guest ever feels that the service exhausts the supply; every one feels that, abundant as the good cheer may be, there is more where it came from. His force is not a barrel on tap, but a fountain welling forth. And no other trait of personality is so significant of the stamina of greatness.

In person Dr. Parrish is below the middle height, but thickset and broad-shouldered, having withal, notwithstanding his sturdy build, a suspicion of the scholastic stoop. His manner in society is frank and cordial, with a shade of reserve in the background, and a touch of positiveness beyond, suggesting unobtrusively the decision and independence of his character. In conversation he is ready and genial, but speaks to the point, and stops when he makes it, whether it be serious

or playful. If he should live to be twice as old as Methuselah, he would not arrive at the stage of garrulity. His quickness in retort or repartee is remarkable; but his satire (of Damascus keenness and temper) is without question the deadliest of his controversial weapons, although, to his credit be it said, he has never used it, except under strong provocation, and not then save in defence of what he felt to be truth, realizing the chivalrous sentiment of Angelo's suitor:

It is excellent
To have a giant's strength; but it is tyrannous
To use it like a giant.

He is fond of epistolary writing; and one of his favorite pastimes, more especially when bad weather or physical disability confines him to the house, is dispatching to his friends brief epistles, composed in imitation of the Hebrew idiom, in which he is an adept, some of these little screeds rivaling in verisimilitude the parable of Franklin's; that once set so many bible-readers by the ears. In the circle of his intimate friends, at his own home or at theirs, he is simply a boy again, and no doubt even a more lovable boy than at first. Here he disports himself in anecdote, reminiscence, wit, and pleasantry, returning quip for quirk, and giving the merriest as good as he sends, though it should chance to be no better than nonsense, which he is too wise a man to answer with anything else. Years, while ripening his head, have renewed his heart. Admirable in public, and agreeable in society, he in private is altogether delightful. His countenance is handsome, expressive of sagacity informed by fellow-feeling, and — but is it not graven in your frontispiece?

There are seven private inebriate asylums in Scotland, which receive cases mostly from the upper and middle classes, who pay for care and attention. Several of them receive contributions from the benevolent, to make up the deficiencies in the cost of conducting the asylum.

Abstracts and Reviews.*

SOME NEW STUDIES OF ALCOHOL.

Recently two papers have appeared which contain some suggestive facts along the line of scientific study of alcohol. The following are some extracts which give an outline view of the work and general conclusions reached. The first paper is by Dr. Kerebert "On the Action of Alcohol on the Animal Heat Functions," published in the *Therapeutische Gazette* for February, 1890.

He remarks on the conflicting evidence of the physiological action of alcohols, and believes that it is attributable to the diverse circumstances, and imperfect methods, faulty observation, and deductions which are made.

The asserted value of alcohol as a food, and its peculiar molecular composition and tendency to undergo oxidation, and yield energy in the form of heat, give great value to any accurate information of its effects on the economy.

The study of the action of any agent on thermal processes involves the consideration of its effects on the quantity of heat produced, the quantity dissipated, and on the bodily temperature. Investigators have been led to determine heat production by *indirect* or *direct* calorimetry. Indirectly, it is estimated through a knowledge of the quantities and chemical composition of the substances entering the body as food, and of the effete principles resulting from their oxidation, and from this data computing the amount of heat evolved; or, by regarding temperature changes in the organism as indicating similar alterations in thermogenesis. Directly, the heat formed is measured by means of an instrument specially adapted for direct determination, and hence known as the calorimeter. Practically, all the work done with alcohol has been accomplished by the indirect method, and is accordingly

open to many sources of error and is inconclusive. For while there can be no doubt that CO_2 , urea, phosphates, and other effete matters arise through destructive tissue metamorphosis, by which heat is formed as the chief result, just what importance any or all of these products possess in indicating the degree, or even the direction, of the activity of the processes concerned in heat production is far from being determined.

Desplat's experiments on rats, guinea-pigs, and small birds, and Senator's on dogs, in which the heat formed was measured by a calorimeter, and the CO_2 by established methods, would lead us to believe that there exists no direct relation between the quantity of heat formed and of CO_2 eliminated; while in connection with urea, which was once looked upon as almost an absolute index of tissue waste, recent experiments show quite clearly that the quantity eliminated is indicative of the amount of nitrogenous food and not of retrograde metamorphosis. Finally, that there is no definite relation between bodily temperature and heat production is clearly evident whenever the two are measured simultaneously for consecutive hours. Until, however, the precise values which these effete matters possess in indicating the nature of the changes in thermogenesis are definitely established, their usefulness in suggesting the probable direction of thermal alterations may be accepted with caution and reserve.

A number of authorities and their experiments are given, from which he concludes that the evidence regarding the consumption of O_2 and the elimination of CO_2 is conflicting. The most carefully performed experiments indicate a determination of both, but this is not definitely settled.

The careful studies of Riegel, embracing eighty-six experiments on man, lead to conclusions which doubtless closely represent the peculiar actions of alcohol on animal temperature. In his summary he states, among other conclusions, that—1, alcohol, even in moderate doses, in many cases causes a lowering of the temperature, the amount of diminu-

tion averaging, as a rule, a few tenths of a degree C.; 2, only exceptionally is an elevation of temperature detected, and not infrequently after small doses there is no noticeable change; 3, the frequent repetition of doses of alcohol diminishes the lowering effect; 4, the amount of diminution is directly proportional to the dose; 5, the depression for the most part is of short duration. My own experiments on dogs agree in their results with the conclusions of Riegel. The intensity of the action, however, is far from always being in accord with the dose, a given dose in one case producing a profound effect, and in another little or almost none. Illustrations of this may be seen in records of experiments in this paper.

Briefly, the evidence, then, seems to indicate that the quantity of oxygen consumed and CO_2 and other effete matters given off are diminished, and the bodily temperature lowered. All these changes being in harmonious relation strongly suggest that alcohol diminishes the normal activity of tissue changes.

The fact that CO_2 is not increased is one of great practical economic importance, for it must be evident that either this gas does not constitute one of the chief products resulting from the decomposition of alcohol, or else general tissue metamorphosis is so diminished that the quantity of CO_2 eliminated largely represents an alcohol derivative.

That this agent rapidly undergoes chemical change after absorption, that but a small percentage is eliminated as such, and that we do not find either in the system or excreta any immediate oxidation products, is clearly established. What becomes of it and in what form eliminated are unsettled problems. The experiments of Schünnus and Salzynski show that living blood causes about ten per cent. to disappear immediately.

It seems very clear from this work that alcohol, in moderate quantity, rapidly undergoes alteration in the system, and that but a small percentage is eliminated as such.

While we do not know the precise nature of this change,

there is no reason to believe that a more complex molecule is formed; but, on the other hand, the indication is of a breaking up of the molecule into simpler bodies, such as CO_2 and H_2O . As it is obviously impossible to satisfactorily detect in the excretions such small quantities of H_2O as would thus be formed, we are dependent alone on estimations of CO_2 . Here we meet with the formidable indication that the quantity of CO_2 eliminated after alcohol is actually less than normal. This, however, is explicable in the possibility of the drug acting directly upon the heat processes and lessening normal tissue metamorphosis, thus diminishing the amount of the gas arising in this way, and supplying a portion of the deficiency from its own decomposition. That it does diminish destructive tissue change seems supported by the lessening of the amount of nitrogenous and other effete matters, and also by the diminution of the animal temperature. But this can only satisfactorily be determined by direct measurement of the quantity of heat produced and dissipated.

Alcohol, as is well known, yields an enormous amount of energy in the form of heat during its complete oxidation, one gramme of absolute alcohol setting free nine kilogramme degrees. Should the alcohol thus be oxidized in the body, the heat evolved from a quantity, such as taken by Bolländer (100 c.c.), would equal about seven hundred and fifteen kilogramme degrees, being equivalent to about one-fourth the total approximate heat production of an average man per diem. The amount of CO_2 formed would be equal to about one hundred and fifty-two grammes, or one-sixth the mean quantity eliminated per diem. That this agent actually does yield energy, or else conserve the tissues, or both, is also evident in its power of sustaining the system in disease, in the increase of body weight often observed in drunkards even on restricted diet, and the known ability of the economy to maintain an equilibrium of metabolism on limited food. Should alcohol thus yield energy it is obvious that the total output of heat must be increased or less tissue change occur to compensate for it.

Beyan Lewis made some calorimetric experiments, and reached the following conclusions:

1. A primary check to heat formation is most marked and protracted when small doses of alcohol are given.
 2. A pronounced fall of body temperature is most marked during the first quarter hour and coincident with the primary check to thermogenesis.
 3. A secondary greatly increased heat production varies directly with the dose.
 4. The increased heat production is manifested over a more prolonged period after larger doses.
 5. The increase of heat production is gradually augmented from time to time until the heat climax is reached, a period usually coincident with the registry of the *Loetz* bodily temperature.
 6. The heat climax is more protracted or postponed, and is greater in degree with larger doses of alcohol.
 7. The greatest loss of heat units from temperature (diminution of temperature) occurs during the first interval, subsequent intervals being marked by a still progressive loss, which, however, becomes less towards the period of heat climax when a restitution to the normal of temperature begins.
 8. With small doses of alcohol this restitution of bodily temperature is usually sudden or comparatively rapid in operation: after larger doses the return to normal temperature is spread out over a longer period, being extremely tardy when a very large dose is administered.
 9. The characteristic action of alcohol is that of greatly increasing the heat production, while a dispersion of the fresh formed heat is facilitated by peripheral vaso-motor paresis, and that only in very small doses we get a temporary lowering of the heat functions.
- In the experiments of Wood and myself on dogs five observations were made with different doses, and with results in accord generally with Beyan Lewis's, inasmuch as on the whole heat production and dissipation were both increased. Our experiments were conducted differently, the normal pro-

duction and dissipation being studied for one period of from one to two and a half hours, then the alcohol given, and a second observation made for a similar length of time. These results are here tabulated.

The object of this special study was to determine the action of alcohol on the animal heat functions, during consecutive hours. An improved calorimeter was used, and dogs experimented upon.

Three series of experiments were made. In one commercial alcohol (sp. gr. .835) was given by the stomach, and in a second hypodermically. In the third series absolute alcohol was used to eliminate effects which might possibly be dependent upon foreign substances. Like fusel oil, in the former, The doses employed were always in direct relation to the body weight, being in proportion of 1.25 c.c., 2.5 c.c., and 5 c.c. per kilo. Such quantities seem large because representing enormous doses in man, yet they are never toxic in the dog. It is rare, after doses of even 2.5 c.c. per kilo, that any marked evidences of intoxication are present. If so, the maximum effect is manifest during the first and second hours. After doses of 5 c.c. per kilo, alcoholism is decided. The phenomena are usually marked during the first hour, then commonly increased a little, and gradually fade away noticeably during the progress of the experiment, but at times they grow more and more pronounced. This dose is, however, far from being a fatal one, which is perhaps about 8 or 10 c.c. per kilo of absolute alcohol. With the largest doses vomiting sometimes occurs, and when hypodermically injected local abscesses commonly followed.

The prominent features in these records are the fluctuations in heat production and heat dissipation occurring from hour to hour, the general tendency to a diminution of heat production and relative excess of heat dissipation and the generally downward and progressive fall of the animal's temperature. While the variations from hour to hour in production and dissipation are quite noticeable, they are, as a whole, no greater than is common in normal animals. The peculiar

actions of the drug are, therefore, manifest in the prevailing direction of the changes in these functions and their relation to each other, by which the bodily temperature becomes altered. There follows a series of eighteen experiments with very elaborate tables of results, which are concluded in the following:

It seems accordingly clearly established from these records that the characteristic action of alcohol on the animal heat functions is to cause relative to heat production an excess of heat dissipation and thus lower bodily temperature. Why in certain experiments the reverse of this should occur is yet to be determined. Doubtless the explanation is to be found in a complex action of the drug on the processes concerned in, or closely related to, the heat mechanism and thus affecting it. First, it is obvious that there is a reciprocal relation existing between the functions of heat production and heat dissipation, so that a primary alteration in one will induce a sympathetic change in the other; accordingly, if heat dissipation is unduly increased, as when we are exposed to cold, heat production becomes also increased to make up for the excessive loss, or should heat dissipation be diminished, heat production would tend to be similarly affected to prevent unnecessary loss of energy or an abnormal increase in bodily temperature. Therefore, all conditions which primarily affect the quantity of heat dissipated will affect indirectly the activity of thermogenesis. Second, it seems to be an established fact that alcohol causes a dilatation of the cutaneous capillaries, accordingly, the amount of blood exposed to the cooling influences of the surroundings is increased and as a consequence heat dissipation facilitated. Therefore, alcohol would thus tend to increase heat dissipation, and, since dissipation is increased, it is obvious that the effect of this would be indirectly to increase thermogenesis to make up for the greater loss. In fact, however, when animals are subjected in the calorimeter to such studies, the characteristic effect is to diminish heat production. It will thus be observed that we have here two opposing factors

affecting heat production, one indirectly tending to increase it through vaso-motor alterations, and the other to decrease it, probably through direct action on thermogenic centers. Hence, whether or not in any given case heat production would be increased or diminished, or what the relation of heat production and heat dissipation would be, would depend on other things being equal, to the relative values and relations of these two factors. Added to these is undoubtedly a third factor, which further complicates the action. There can be no doubt that alcohol undergoes decided molecular alterations on entering the blood. The fact that about ten per cent. of pipe almost instantly disappears in the living blood, that but a very small percentage is eliminated as such, and that but traces exist even after large doses after the lapse of twenty-four hours, all point conclusively in this direction. While it is admitted that we do not know the exact changes which occur in this substance, it is opposed to all knowledge of the chemical processes in the animal organism to suppose that the molecule is rendered more complex while, on the other hand, there is reason to believe that it undergoes destructive changes through oxidation, yielding simple products, such as CO_2 and H_2O , and energy in the form of heat. Since each gramme of alcohol yields about nine kilogramme degrees the amount of heat evolved from a moderate dose, as already shown, may be considerable. Consequently, the capability with which heat would thus be generated may be a matter of great moment in affecting the thermal output during a given period of time. Hence, it follows, that even though certain conditions connected with the method of experiment generally tend to diminish heat production, nearly one-fifth yet the number of heat units arising from the probable oxidation of the drug might more than compensate for such a loss. Added to this there may be a temporary increase in the quantity of heat formed as a result of the continued fluctuations in the activity of thermogenesis under normal conditions. Moreover, while the quantity of heat formed after the ingestion of alcohol is practically unaltered,

yet the tissue change may be actually diminished, as is indicated in the probable lessening in the amounts of CO_2 , urea, and other effete matters eliminated, the lack of heat thus resulting being made up by the destruction of the alcohol with the formation of new and unknown derivatives. Consequently, the study of the action of alcohol on animal heat functions is, doubtless, one of great complexity, in which we have, as important factors, the effects produced by and inseparable from calorimetical methods or other associated circumstances; the considerable and inexplicable fluctuations which occur in the heat processes in normal animals; the action of the drug upon the circulation affecting indirectly, and likely directly, these processes; the probable generation of heat as a result of the oxidation of alcohol; and possibly an action directly or indirectly diminishing tissue metamorphosis, some of these being directly antagonistic, it is obvious that the nature of the results following the ingestion of alcohol will depend upon their relative degrees of intensity, and, as a consequence, the variations which occur are not without explanation.

In conclusion, these experiments, as a whole, show clearly that alcohol does not affect the total quantity of heat produced; that more heat is dissipated than produced; that the fall of temperature is due to the excess of dissipation and is in direct proportion; and that in all likelihood alcohol by undergoing oxidation yields energy in the form of heat, thus conserving the tissues and acting as a food.

The second paper is by Dr. Hemmeter, on the comparative physiological effects of certain members of the Ethylic Alcoholic series (CH_3O to $\text{C}_7\text{H}_{15}\text{O}$), on the isolated mammalian heart, gives the result of some studies at Johns Hopkins University. The author remarks that the literature on the physiological action of alcohols is out of all proportion to the real increase of knowledge of the subject. *He* gives the results of different authors who have experimented with different alcohols.

Dujardin Beaumetz and Auzigé have published a series

of investigations on the comparative toxic properties of the alcohols. "These experiments consisted in administering varying proportions of ethylic, propylic, butylic, and amylic alcohols to various dogs, the quantities in some cases being passed into the stomach, in others injected under the skin. The weight of the doses administered was in every case kept in ratio to the weight of the animal operated upon. The following conclusions are drawn from the results:

1. "The toxic properties of fermentation alcohols follow their atomic composition in a sort of mathematical order. The higher the figures representing the atomic composition, the more considerable is the toxic effect. This is equally true whether they are injected under the skin or introduced into the stomach.

2. "For the same alcohol the toxic action is greater when the dose is administered through the stomach than subcutaneously; in the latter case the toxic effect is increased by dilution.

3. "The toxic phenomena are the same for all alcohols, save in the degree of intensity. The injuries caused follow in a progressive scale from the ethylic to the amylic alcohol. The injuries to the mucous membrane of the stomach being just as great whether the alcohols are administered subcutaneously or are ingested by the stomach. Severe congestion of the small intestines was noticed in some cases, in whichever way the alcohols had been administered; and, moreover, it was noticed that for the same alcohol, the congestion and pulmonary apoplexy were most frequent when the alcohol had been administered by the stomach."

Dogiel found, from many experiments that alcohol first increased the heart's action, then diminished it; during the later stages the vaso-motor centers are found to be incapable of responding to stimulation.

Ringer found that all the alcohols arrest the action of the heart in the diastole. The activity of the alcoholic action increases with the complexity of the alcohol.

Three main conclusions are finally arrived at, viz.:

1. The quantitative similarity of action of the different members of the alcoholic series.

2. The general quantitative relationship, viz., that as the complexity of the molecule increases, the physiological activity increases.

3. The probability of a further quantitative relationship, viz., that the constant chemical difference is corresponded to "by a constant physiological difference; that each additional CH_2 group increases the activity by a definite amount."

It seems certain, from observations of many, that the alcohols act as vascular dilators; their physiological action, therefore, is not analogous to that of alkalis.

This leads me to say a few words concerning the chemistry of the alcohols. According to differences in their molecular structure as manifested by differences in their conduct when oxidized, alcohols are divided into primary, secondary, and tertiary. In studying the relation between physiological activity and chemical constitution, it would be necessary that all alcohols used should belong to the same class.

In considering the influence of alcohol on the plasma and corpuscles of the blood, it was evident that not all the alcohol mixed with the blood in circulation experiments enters the system and exerts its detrimental influence directly as alcohol. A portion may be used up or changed in coming in contact with the blood constituents. Buchheim thinks that this is owing to some vital phenomena of the blood for after the blood has stood from eighteen to twenty hours, it can dispose of much less alcohol.

Austie gave a dog one ounce of brandy daily for ten days. The amount extracted on the tenth day was only 1.13 grams of alcohol. The eleventh day he gave the animal half an ounce of brandy and two hours later killed him and cut the body up in small pieces and put them in water for extraction. It appears that only twenty-four grains of alcohol were recovered, or not more than one-fourth of the amount which had been taken a few hours before. It seems plausible, then, that when alcohol reaches the blood directly or through the

alimentary canal, a portion of it at least, and probably the largest, is changed to something else. Whatever this is we are not able to tell in the present state of our knowledge.

The direct action of alcohol on the blood constituents has been studied by Schmiedeberg. Here we are informed that blood mixed with alcohol does not give its oxygen up in the presence of a reducing agent as readily as the same blood in a pure state. As it is the rôle of haemoglobin to yield oxygen which has been taken up by the lungs to oxidizable blood and tissue constituents in the systemic circulation, the action of alcohol on blood just mentioned must be of great importance for processes in the living organism. A direct chemical influence of the alcohol, in addition to its action on heart and nerves, is therefore very probable; that is, providing alcohol acts on the blood inside of the body in the same way it does outside.

Herrman describes the effect of the vapor of alcohol on blood thus: The rouleaux or corpuscles break asunder, the corpuscles become spheroidal, these minute spheres become paler and paler and finally disappear entirely, while the plasma colors intensely red and separates out crystals.

According to Marvaud alcohol produces a disturbance in the diastolic relations between the corpuscles and the serum, whereby the nutrition of the former is interfered with.

The following interesting observations were made by Jalliet and Hayem. In animals into which alcohol had rapidly penetrated from the stomach, these observers confirm an extensive alteration of the red blood corpuscles; scarcely one-third of them were intact, the remaining were partly of the mulberry type, with yellow precipitates of haemoglobin in their interior. Still others were reduced in size and deprived of their haemoglobin entirely. On injecting alcohol directly into the blood, changed and destroyed corpuscles were found, but no mulberry forms. On introduction of gradual small doses the haematoblasts and leucocytes were strikingly increased; so too the coagulability of the blood. Blood gas analysis in animals under not quite intoxicating

doses of alcohol, showed reduction in the respiratory capacity of blood corpuscles with considerable increase of CO_2 in the blood, which latter fact failed partly brings into connection with the oxidation of the alcohol.

Schulz had already described the separation of the haemoglobin from the corpuscles and the coagulation of the blood on addition of alcohol, in 1841.

Lallemand, Perrin, and Drury, Paris, have observed in the blood of alcoholized animals, large quantities of oil globules floating on top after blood was drawn; these were, however, observable in the blood of the same animals after they had gotten over the effects of the alcohol. According to Baer, Magnus, Huss, and others have observed the same in the blood from the heart and large veins of persons that died in intoxication. An interesting study of the effect of alcohol on febrile animals was made by Manassein. The corpuscles of the blood of such animals are very much diminished in size by the elevated temperature. This is not the case if the animals are given alcohol, when the corpuscles become larger the longer the intoxication lasts and the more the temperature is lowered by the alcohol.

All of these observations and experiments on the influence of alcohol on the constituents of the blood justify us in concluding that in circulation experiments on the isolated heart with alcoholized blood, all of the disturbances observed in the function of the organ are *not* due primarily and exclusively to the direct action of alcohol on the heart tissue, but that the action of the alcohol on the blood itself, whereby its nutritive and oxygenating functions are impaired, should enter into consideration.

The conclusions reached were that the physiological activity increases with the complexity of the molecule, and also increases as the temperature increases; also the vapor density, the specific gravity, and the boiling point becomes higher; the ethylic series forms an exception to this rule.

It is evident from my experiments and those of Beaumetz and Duggan, that ethyl alcohol causes a break in the series,

being less hurtful than methyl. Since ethylic alcohol is probably constantly present in minute quantities in the atmosphere, fermentation is going on in many ways and places, and as dogs probably must frequently get some little ethyl alcohol in their food, this fact has been explained theoretically by supposing that an organism can establish a special degree of tolerance of one alcohol while retaining its sensitiveness to others.

A further explanation of the tolerance of ethylic alcohol by certain animals is furnished by a fact which is becoming more and more established, and that is, that ethyl alcohol in minute quantities is a normal constituent of almost all animal tissues. One of the clearest investigations on this subject is published by Rajewski, who obtained the iodoform reaction in the distillate of fresh liver, brain, and muscles of animals receiving no alcohol in their food. He concluded that these tissues either always contain certain quantities of ethyl alcohol, or that the iodoform test is not a sufficient proof of the existence of ethyl alcohol. Binz holds a similar view, according to which this test indicates alcohol in traces, but also carbohydrates, albumen, fibrin, casein, and glue. According to Millon the iodoform reaction has been obtained with saliva of teetotalers. This reaction, as is perhaps well known, is carried out by adding a few drops of a solution of iodine in iodide of potassium to the solution to be examined; then just enough sodium hydroxide is added to make the yellow color disappear; then the mixture is heated up to about 60° . On cooling, the solution becomes a yellowish tint, and the minutest trace of alcohol will cause the formation of iodoform, which can be recognized under the microscope by its hexagonal crystals.

Bechamp extracted 0.8 grain of alcohol from a piece of meat weighing six pounds. He also found alcohol in a sheep's liver soon after death, and also in the human brain; he also found alcohol to be a normal constituent of fresh milk. He has developed a theory of fermentations, which are termed microzymes. These are called the physiologically

active parts of cells of animal tissues. They are the granular masses that have the power of enduring fermentation, like other cellular ferments, but differ in quality and energy of action according to the part of the organism from which they are taken. He supposes them to be the center of all chemical changes of living and dead tissues, and to belong to the animal organism as integral parts, without having to get into it from the air or other medium; they are even in perfect health capable of causing all those processes *intra vitam* which are commonly known as fermentations, and *post mortem* all those metamorphoses which are comprised under the phenomena of decomposition. All soluble ferments are products or secretions of microzymes.

The question whether the alcohol acted on the nerves and ganglia, the blood-vessels, or on the muscular tissue of the heart, was discussed, and the conclusion reached that the main effect of the drug is exerted upon the cardiac muscular tissue. It is possible that the blood-vessels of the coronary system are also acted upon to a certain extent. The most obvious phenomenon, as pointed out by Prof. Martin, is the great dilation of the isolated heart poisoned by ethyl alcohol, accompanied by an imperfect systole, so that the ventricular cavity is not obliterated at the end of the systolic contraction, and the less so the longer the alcohol has been administered. This incomplete systole is compensated for by a more extensive diastole as long as the heart can swell. As soon as the pericardium prevents this excessive expansion in diastole, the difference between diastolic and systolic capacity becomes less and less, and the heart pumps around less blood. An interesting matter in this connection is a fact which I have observed in several cases in which the heart was expanded and swollen to a great extent under alcohol, which is, that by placing a stethoscope directly on the organ one can hear plainly so-called regurgitant murmurs. These murmurs are undoubtedly on both sides of the heart. Perhaps they are caused by the swelling and expanding of the heart eccentrically, whereby the fibrous rings to which the valves are attached are so enlarged that the valves are no longer

large enough to cover them, and there are tricuspid and mitral insufficiency and regurgitation. In all my experiments small hemorrhages into the cardiac tissue were observed; these were very considerable with the higher alcohols. It was thought that they were the direct result of the action of the alcohols; but by injecting considerable quantities of alcohol into the jugular veins of dogs, I could in no instance produce them on the heart.

IS NARCOTISM DRUNKENNESS?

Are the results of the excessive use of morphine drunkenness? This was the question recently before the Illinois Supreme Court in an action for divorce.

As is well known, the Illinois statutes are not very strict in the matter of divorce, and ever since 1827, habitual drunkenness for two years has been a ground for absolute divorce. In the case at bar, there was no evidence showing that the defendant ever used intoxicating liquors to excess, but evidence was offered and received to the effect that for several years he had been in the habit of using hypodermic injections of morphine in his arms and legs. It was also shown that the effects of morphine thus administered were very similar and in some respects apparently identical, with those produced by the excessive use of intoxicating liquors. Upon this similarity of effects the complainant expected to obtain her divorce.

The appellate court decided, after consulting the dictionaries, that she could not get any relief from her conjugal troubles. The said drunkenness is "ebriety, inebriation, intoxication; all words nearly synonymous, and all expressive of that state or condition which inevitably follows from taking into the body, by swallowing or drinking, excessive quantities of such liquors." As hypodermic injections were not known in 1827, when the statute was passed, the court said, the Legislature could not possibly have had in mind the use of morphine, though it was not mentioned.—*Times and Register.*

EFFECTS OF ALCOHOL ON THE NERVE CENTERS.

By T. LAUDER BRUNTON, M.D.

The following extract from the Gronian lectures, delivered in London, will be of especial interest to our readers:

"It is probable, as I have said, that all the substances belonging to the alcoholic series possess the power of abolishing to a greater or less extent, the excitability of all the nerve centers within the body. They appear to act upon those centers in the inverse order of their development, destroying first the functional activity of the highest ideational and volitional centers in the cerebrum, those centers which are the latest to be developed, and which not only raise man above the animals but raise individual men above their fellows. As their action increases nerve centers of a lower development are affected, or, as Hughlings Jackson puts it, the most highly organized centers are affected first, while the lowest, most simple, and at the same time most automatic and stable centers are affected last. The perceptive and motor ganglia, the reflex centers of the cord, the vaso-motor and respiratory centers, and the heart, all become paralyzed when the action of the members of this group is pushed to its utmost extremity.

Different Action of the Members of the Alcoholic Group.—But they are not all rendered inactive in the same order by each member of the group. On this account some members are useful as hypnotics, simply inducing sleep as one of the first results of their action, although if the dose be large the sleep may pass into complete unconsciousness and anaesthesia with loss of reflex action.

For the production of prolonged sleep we require a substance whose action will be slight and at the same time prolonged. But for anaesthesia we require a substance which will act rapidly and powerfully, but will be quickly elimin-

ated and cease to act very shortly after its administration is discontinued. We therefore look for hypnotics among the substances which have a heavy molecule, and are either liquid or solid in form, so that they may be given by the mouth, and being absorbed into the blood, continue to act for a length of time. We look for our anaesthetics amongst the lower members of the series which have a light molecular weight, and are either gases or volatile liquids. Although heavy liquids like paraldehyde, or solids like chloral hydrate, will act as anaesthetics when given in large doses, yet their use as such would be very dangerous, for the line between their anaesthetic action and their paralyzing action on the respiratory centers, or heart, is very narrow, and might easily be crossed by very slight excess in dose. The elimination of such substances being slow we cannot at once get rid of their effects of excess in the same way as we can in the case of those which, like ether, enter the lungs as vapor and are readily eliminated. It will, therefore, be convenient to consider the action of hypnotics and anaesthetics separately, although they may belong to the same chemical group.

Modification of Action of Anaesthetics and Hypnotics in Nervous Tissue.—But it may nevertheless be advisable to consider the mode in which they both act on nervous tissue at this time. We may divide the theories of action into three: First, that they alter the blood in such a way as to render it incapable of maintaining the functional activity of the nerve cells. Second, that they alter the circulation. Third, that they affect the nervous tissue itself. Some anaesthetics, such as nitrogen, nitrous oxide, and possibly marsh gas and some of the other hydrides of the alcohol series, produce anaesthesia by a sort of process of suffocation, by excluding oxygen from the lungs, while the movements of respiration continue to go on. The reason for supposing that these substances simply act by exclusion of air, is chiefly that in an animal breathing nitrous oxide, anaesthesia comes on at the moment when the blood becomes quite venous; and the anaesthesia does not come on when the nitrous oxide

is sufficiently mixed with air. But for my own part I am inclined to believe that the nitrous oxide has an action of its own on the nerve centers and does not simply exclude oxygen from the blood. For while we might regard the anesthesia produced by this gas as simply due to suffocation, we cannot explain its various stimulant action in this way, the symptoms it produces when mixed with air having nothing in common with those of suffocation.

"*Salt Frog*."—The second theory that the anæsthetic action of drugs is due to their arresting or diminishing circulation in the nerve centers has been disproved in regard to the most important anæsthetics by a very simple experiment. When all the blood has been removed from a frog and its vessels have been washed out with a weak saline solution, it still remains active for a certain time; but if such a frog be placed in an atmosphere saturated with chloroform or ether it becomes narcotized.

Effect of Circulation.—But while the action of anæsthetics cannot be wholly explained by exchanges in the circulation, they are very important, as we shall afterwards find, in regard to the action of hypnotics, and anesthesia has actually been induced and operations performed by suddenly checking the circulation in the brain.

We now come to the third theory, that anæsthetics affect the nervous tissue itself. The experiment already mentioned of anæsthetizing a "salt frog" with chloroform shows conclusively that anesthesia is due to the action of the chloroform on the brain.

Semi-Coagulation.—The nature of this action has been supposed by Heinrich Ranke to consist in a transient fixation of the albuminous molecules in the ganglion cells of the cerebral cortex, as well as in the nervous and muscular fibers. Claude Bernard and Binz have expressed similar views, and Bernard has used the term "semi-coagulation" to express the condition which occurs in the nerve cells, and probably this is nearly correct. The condition is, however, so transient that it might perhaps be better compared to the tetanic con-

traction of muscle which quickly ceases when the irritant is taken away. In all probability the condition of anæsthesia and of tetanus are both to be regarded as the first stages of coagulation, and if sufficiently prolonged complete coagulation, and death of the tissue will occur. A curious likeness indeed was found by Ranke between the action of anæsthetics on the brain and on muscles, for they coagulate the albuminous substances extracted from both, and when injected into an artery they produce rigor mortis in the muscles it supplies.

Effect of Different Members of the Alcoholic Group Upon Albuminous Substances.—In order to get a chemical basis for the action of alcoholic substances on nervous structures it seemed to me advisable to ascertain the action of such substances on albuminous bodies. Dr. Sidney Martin and I have therefore commended a research on this subject, and although it is far from complete we have already obtained the interesting result that while the lower alcohols, methyl, ethyl, and propyl alcohols, coagulate albumen almost completely, the butyl alcohols have less effect, and any precipitate they may produce is soluble, while the higher alcohols—amyl and heptyl—do not coagulate at all.

Chemical Affinity between Nerves and Nervous Tissues.—There can, I think, be little doubt that there is an affinity between many, perhaps all, the bodies belonging to the alcoholic series and the substances of which the nerve centers are composed. In all probability they enter into a loose combination with the nervous tissues for a time and interfere with the process of oxidation and reduction on which its activity depends. As Binz has well expressed it, morphine, chloral, ether, and chloroform possess a strong affinity for the substance of the cerebral-cortex in man. It combined for a while with the hypnotics carried to it by the blood, and by the resulting alteration in its tissue change, "lessening of the dissociation of the living matter," in Pfäuger's sense, it becomes unable to perform the functions of the waking condition.

But Binz has also noticed another condition, namely, that morphine produces in the cells of the nerve centers an alteration which remained long that caused by quinine in the whole blood corpuscles. Referring again to Ehrlich's observation we can see that if anaesthetics and hypnoics cause contraction of the protoplasm in the cells of nervous centers they will thus lessen oxidation and tend to diminish functional activity. Such a contraction might be caused not only by alkaloids, like morphine, but by a mere change in the reaction of the cell or the fluid surrounding it. When the cells, such as amoeba or infusoria, are treated with a very weak acid they contract and with a weak alkali they swell up. It therefore seems probable that mere diminution of alkalinity by the products of the tissue waste may tend to lessen oxidation in the brain cells by contracting the protoplasm at the same time that the changed reaction lessens their affinity for oxygen.

The presence of any substance which will tend to increase the formation of acid in the nerve cells ought therefore to have a hypnotic or even an anaesthetic action. Now, according to Binz, this actually occurs, and chlorine and bromine, iodine, ozone, and nitrates have all a more or less hypnotic action. The fumes of chlorine, bromine, or iodine, inhaled by a frog cause paralysis of the nerve centers according to Binz. On account of the local irritant effect upon the respiratory passages and the alteration they occasion in the blood they cannot be brought in contact with the nerve centers of mammals in the same way as with those of the frog, and therefore they cannot be employed as anaesthetics, but nevertheless they tend to exert a similar action in mammals, and when combined with alkalies they tend greatly to increase their anaesthetic action.

Action of Halogens on Muscle.—But I have already mentioned that the same process of contraction or partial coagulation which leads to anaesthesia occurs also, though to a much smaller extent, in the muscles, and the presence of halogens, chlorine, bromine, and iodine appears to increase

the effect of an alkyl upon the muscles even more than it does on the nerve centers. Thus, the haloid combination of the alkyls, although they are more rapid anaesthetics, tend also to affect muscle, and more especially the heart, in a greater degree than those compounds from which they are absent. A similar tendency to paralyze muscular fiber, both in the limbs and the heart, was noticed by Cash and myself to be produced by combination of the halogens, and particularly iodine and bromine, with ammonia or compound ammonias.

Halogen Compounds as Anaesthetics.—The introduction of the halogens into anaesthetics therefore tends to increase their risk attending their use, but at the same time increases their anaesthetic power and renders them more convenient. Our choice of substances practically useful as anaesthetics from among the innumerable alcoholic groups is limited. In order to be safe they should not have any marked tendency to paralyze the heart. All anaesthetics tend to paralyze the nervous system, beginning with the highest and most volitional centers in the cerebrum and ending with the lowest or most automatic centers in the medulla oblongata. Hence, if they are pushed far enough, they will all paralyze the respiratory center and stop its movements; but these can be readily imitated artificially, and the blood can thus be kept aerated and the tissues supplied with oxygen until the anaesthetic has been either destroyed or sufficiently eliminated from the respiratory center to allow it to regain its activity. When the heart stops the supply of oxygen to the tissues entirely ceases. The anaesthetic is not entirely eliminated nor destroyed, and the processes of life are arrested. Mechanical stimulation may help the heart to make a few feeble beats, and if artificial respiration be kept up actively so that blood charged with oxygen reaches the left ventricle it may resume its activity. Nevertheless, stoppage of the heart is much more dangerous than stoppage of the respiration, and those anaesthetics which tend to enfeeble the heart are the most dangerous. The action of alcohol as a soporific is widely

known. The common use of spirits at night to bring on sleep suggest the action of some of the alcohols in the higher zones. The narcotic power of alcohols as we ascend in the series, and the sopor induced by them, is also of longer continuance. In a minute study of the alcohols the author concluded that paraldehyde was the most useful of the alcoholic narcotics, for the reason that it did not depress the heart's action, nor does not leave any special discomfort the next day.

TOBACCO AMBLYOPIA.

Dr. Connor of Detroit, has lately published an excellent paper on this subject, from which we make the following interesting selections:

After giving the history of a number of cases he says:

"These cases have the following common features:

"1. The patients were great smokers and total abstainers.

"2. They suffered from a great and comparatively rapid loss of sight not remedied by glasses, and not due to external changes.

"3. The ophthalmoscopic changes were negative aside from a diminution in the size of the central retinal arteries.

"4. There was a central scotoma for colors, the colors being readily recognized throughout the rest of the field of vision. This scotoma was not seen by the patient as a dark spot, and in this regard differs from the scotoma due to disease of the outer layers of the retina.

"5. In each case there was a distinct history of mental worry and impoverished nutrition from the loss of appetite, etc., preceding the inception of the first symptom of failing sight.

"6. The fields of vision aside from the scotomata were normal.

"7. The stopping of the tobacco was followed by a more or less rapid recovery of distinct vision throughout the entire fields of vision.

"From various sources I have collected twenty-seven cases in each of which tobacco was used to excess, but no alcohol, and each of which presented substantially the same symptoms as those already reported. . . .

"I have never met with but one case of amblyopia in a drinker of alcohol who did not use tobacco.

"In this case the amblyopia was not central, nor was it regular in the two eyes. From the literature at my disposal I have been unable to find a single case of central amblyopia in a non-user of tobacco, and yet a drinker of alcohol. Perhaps such cases have been observed, but I could not find them fully and accurately recorded.

"Hence, estimating the cases of central amblyopia as induced by the abuse of alcohol alone, or by the abuse of tobacco alone, it would seem that tobacco induced all and alcohol none.

"But the majority of cases of central amblyopia occur among those who use both alcohol and tobacco to excess. Of these I have been able to collect the records of some 700 cases, made with more or less fullness. It is held by many ophthalmologists that the central amblyopia is induced by the combined action of these two drugs. Yet, as we have already seen, tobacco alone will, and alcohol alone has not been shown to, induce the symptoms under conditions described. Farther, in these mixed cases recovery from the amblyopia has followed abstinence from tobacco while the intemperate use of alcohol has been continued. . . . 1st, men are exposed to greater vicissitudes than women; 2d, they indulge more generally and intemperately in free living.

"2. It is urged also that other morbid states may induce a similar state of central amblyopia, as exposure to excessively bright light, etc.

"3. If tobacco will produce this state of the optic nerve, why is it that out of millions of smokers, and smokers to excess, only a few hundreds of cases of central amblyopia are observed?

"4. Again, it is urged that sight does not always grow worse even if the use of the tobacco be continued.

"5. It is also claimed that alcohol will produce this peculiar defect of sight, and that the alcohol is the effective agent in all the mixed cases.

"But, *per contra*, it seems that we have good reasons for believing in the existence of a central amblyopia due entirely to tobacco; for, as we have seen,

"1. It occurs more frequently in men than in women, because men smoke more than women.

"2. It occurs in those who use tobacco to the exclusion of alcohol, and does not occur in those who use alcohol to the exclusion of tobacco.

"3. It gradually disappears when the use of the tobacco is stopped.

"4. In cases in which both tobacco and alcohol are used in excess, the stoppage of the tobacco, the alcohol being continued, is followed by an improvement of the sight.

"5. In diabetics it occurs only in those who are excessive in their use of tobacco, and either diminishes or disappears when the tobacco is stopped.

"Granting the existence of a tobacco amblyopia, where is the seat of its lesion?

"Two views in general merit attention. I. Von Graefe held that there must be a central disturbance to explain the symptoms. In support of this view is urged: the symmetrical distribution and equal degrees of scotomata in both eyes; the absence generally of any pathological changes in the retina or optic nerve; the nature of the color blindness; the frequent toxic origin of the amblyopia; and its curative nature.

"2. In opposition to this Leber believed that the central scotoma was caused by a partial neuritis or atrophy of the optic nerve or some anomaly in the blood supply to the layers of nerve fibers.

"From the present state of our knowledge it would seem that tobacco amblyopia was essentially a functional disorder. Possibly this functional disorder may induce an organic change; but more observations are needed to establish this

view. It seems certain that it induces its effects through the circulation of the optic nerves. Possibly the tobacco may induce the interstitial changes described, or these may be due to quite different causes. In all cases tobacco amblyopia must be regarded as an idiosyncrasy.

"The prognosis of tobacco amblyopia is good provided the patient can be induced to stop or suitably diminish the use of tobacco. All the cases I have observed either entirely recovered or greatly improved.

"Questions upon which more light is desired:

"1. What influence has alcohol upon the causation of central amblyopia?

"2. Is it necessary to entirely suspend the use of tobacco in order to effect a cure of tobacco amblyopia?

"3. Does tobacco produce atrophy of the optic disc?

"4. What relationship, if any, exists between tobacco amblyopia and retro-bulbar neuritis?

"5. What relationship exists between diabetes and tobacco amblyopia?

"We have endeavored to show that—

"1. Tobacco has an especial affinity for a central tract in the optic nerves, and may induce central amblyopia.

"2. No other single agent has been shown to induce central amblyopia symmetrical in both eyes, in strictly non-users of tobacco.

"3. Some special condition or conditions are required to precipitate an attack, as abuse of alcohol, diabetes, excessive venery, starvation, mental shock, or distress, etc.

"4. Some individuals seem to have an especial tendency to optic nerve degeneration, and to these the use of tobacco is especially injurious.

"5. Clinically central amblyopia is recognized by its sudden development, by the existence of central scotoma for color in both eyes without limitation of the fields of vision, by the absence of any defect of refraction or recognizable lesion to account for the sudden blindness, and by its occurrence only in tobacco smokers.

"6. Pathologically, during at least its earlier stages, it consists of an anemia of the central portions of the optic nerves. Possibly this may, after a longer or shorter time, induce organic disease, but this has not yet been shown in a case of pure tobacco amblyopia.

"Its prognosis is good during the earlier stages at least if properly managed.

"7. Its treatment consists principally in withdrawing the tobacco. Other measures may be profitably employed, that promote the local nutrition of the eye and the system in general."

DISEASE OF INEBRIETY AND ITS REMEDY.

A prominent Catholic clergyman, Rev. B. O. Boyland, has lately written a very significant paper on the above topic, in the *C. T. J. Year*. The paper shows the drift of advanced thought in this Church, and we make the following suggestive selections:

By inebriate I mean a person who by the frequent use of alcoholic drink contracts the disease of drunkenness. When this disease is once rooted in the system it cannot be cured by mere advice or encouragement any more than you can cure other diseases by mere advice or encouragement. We do not say to the rheumatic, "Have patience and courage, my good fellow, and you will soon be well," but we recommend him to use the best means the best experienced physicians offer for the cure of the disease. If the physician's remedies fail, we advise him to trust in God, and perhaps he may be cured by a miracle. Hence, disease of the body is cured by one of two ways, to wit, by medicine or by miracle. Now, in the ordinary course of nature, God never intervenes, and common sense as well as the teachings of our Church should move us, when afflicted by disease, to use the best natural remedies.

I wish to draw attention to the fact (a) that INEBRIETY IS A DISEASE, and (b) to rouse the feelings of such as love for

Christ's sake even the most degraded of humanity to the necessity of establishing sanitariums for the cure of this terrible disease. My position is this—First, the State should provide such places for those that come under its control, particularly through the courts. Instead of sending the inebriate to jail the State should send him to an inebriate hospital and keep him there until the nerves and brain soil affected by alcohol shall be perfectly cured.

Second, we Catholics should endeavor to emulate the liberality, zeal and charity of our dissenting brethren who have magnificent private homes and sanitariums located in the most healthful and cheery positions that could be desired, where respectable people can go privately and without any danger of losing their good name, and be cared for under the most skillful nurses and physicians. What a boon would it not be for thousands of every rank of life!

How many wrecks would have been prevented in the past and how many could be in the future if we had proper sanitariums, situated in cheerful surroundings, with all the comforts that books and cheerful companions can give, with sufficient freedom to satisfy the reasonable man and sufficient restraint to insure absolute security from the accursed bowl, with all the best appliances and exercises for the building up of the physical man.

ARSENIC INEBRIATES.

In the highlands of Styria the prevalence of inebriety is limited, if not directly counteracted, by the strange habit of arsenic eating. Beginning with a minimum quantity, the devotees of the baneful drug gradually accustom their organism to a dose that would prove promptly fatal to any non-habitué, and persist in excusing their practice by all sorts of sophisms. Arsenic counteracts the raw air of the bleak uplands, it enables travelers to resist the fatigues of mountain-climbing, it stimulates digestion, etc., etc.

"South of this city" (Graz), writes an Austrian physi-

cian, "arsenic eaters are found in nearly every village; there are families where the drug is used by every male adult, and often by white-haired patriarchs of seventy or eighty years, for it must be conceded that the habit is not incompatible with longevity. As a rule, I have been able to recognize a poison-eater by a certain moody appearance, contrasting strangely with the jovial disposition of the highlanders in general. A sallow, though clear and wax-like, complexion, is another characteristic symptom, and, in large doses, the use of the drug often involves serious digestive disorders. It must be admitted, however, that arsenic never produces anything like intoxication in the uglier sense of the word. The poison-eater, directly after a large dose, feels elated; his habitual moodiness gives way to a more buoyant disposition, but he does not become quarrelsome or mania-sentimental; he can keep his temper in a lively controversy and the clearness of his intellect is not visibly affected. Nor are his financial circumstances apt to be imperilled by the habit. At retail rates, half a florin (twenty-five cents) worth of white arsenic will keep a whole family in stimulants for a couple of months. Very few inveterate poison-eaters can use up a florin's worth in the course of a year, while brandy drinkers often waste the wages of a week's hard work in the mad revels of a single night. And while one such night incapacitates or indisposes the toper for work during the next forty-eight hours, an arsenic eater, under the full influence of his tonic, and for hours after, can follow his usual occupation as if nothing had happened."—Dr. OSWALD.

The *Journal of Herivilly* comes in a new dress and has a larger, stronger table of contents. Dr. Burnett still retains the head, and the future of this subject widens each year. This journal has no rivals, and all alone it can sail out into this undiscovered country and bring back rich stores of fact. Our best wishes go with it and its talented editor.

DRINKS, DRINKERS, AND DRINKING; OR THE LAW AND HISTORY OF INTOXICATING LIQ- UORS.

By R. VASHON ROGERS, JR., OF OSGOOD HALL,
BARRISTER-AT-LAW. H. B. PARSONS & Co.: ALBANY,
N. Y. 1881.

This little work of nearly three hundred pages groups a great variety of exceedingly interesting facts, bearing on the law and history of drink and drinkers. The first chapter on intoxicants contains many historical facts on the use of alcohol, with references, so the reader can verify them and study the subject more in detail. The succeeding chapters are on Delirium tremens; Legal Definitions—on Contracts of Inebriates, Wills of Inebriates, Deeds of inebriates, Insurance of Inebriates, Marriage of Inebriates, Rights of Inebriates, Wrongs of Inebriates, Crimes of Inebriates, Civil Remedies of Inebriates, Statute Law on Inebriates. Although published several years ago, this little work will form a valuable addition to the library of specialists, as containing many facts not obtainable from other sources. Send to the publisher for a copy.

THE INTERNATIONAL MEDICAL ANNUAL AND
PRACTITIONER'S INDEX FOR 1890. Edited by
P. W. WILLIAMS, M.D., Secretary of Staff, assisted by a
corps of thirty-six collaborators.—European and American—specialists in their several departments. 600
octavo pages. Illustrated. \$2.75. E. B. Treat, pub-
lisher, 5 Cooper Union, New York.

The eighth yearly issue of this handy reference one-volume manual is at hand. In its Alphabetical Index of New Remedies and its Dictionary of New Treatment, it richly deserves and perpetuates the well-earned reputation of its predecessors. In this volume its corps of department editors has been largely increased, and important papers upon Thermo-Therapeutics, Electro-Therapeutics, Sanitary Science in city and country, and the Medical Examiner in Life

Insurance, are features of special interest. While there is a generous increase in size and material, the price remains the same, \$2.75.

INTERNATIONAL ALCOHOL CONGRESS.

Christiania is to be the seat of the next International Congress convened for the suppression of the abuse of alcoholic drinks, and meetings will be held from September 3d to the 5th of the present year. The choice of the Norwegian capital was made by the permanent committee which sits under the presidency of Dr. Forel at Zurich, and 1890 was substituted for 1889 on the ground that the Paris Exhibition made the latter year less favorable for a numerously attended gathering. The programme includes the following subjects: (1) The means which have proved so successful in Norway in lessening the evils of alcoholism; (2) the results of the Gothenburg system; (3) the alcohol question in relation to the upbringing of the young; (4) the deterioration of indigenous tribes by the spirit trade; (5) substitutes for alcoholic beverages as weapons in the warfare against alcoholism. It is in contemplation to combine with the deliberative programme of the Congress an exhibition, as comprehensive as possible, of all the journals, books, statistical reports, drink samples, etc., illustrative of the international movement. It is the main object of the Congress to throw light on the success attained by different countries and by different means in combating the evils of alcoholism. The discussions will be conducted in English, German, and French.

The military commission of the Austrian army have established a law that the offense of intoxication should be punished the first time by a public reprimand. The second offense by several days' imprisonment in the guard-house. The third offense is evidence that the victim is suffering from a chronic disease, and he is placed under constant surveillance. His pay is taken out of his hands, and every means used to prevent him from getting money to secure spirits.

Editorial.

AUTOINTOXICATIONS IN INEBRIETY.

In some cases of inebriety, after the subsidence of the acute symptoms, and the removal of alcohol, distinct periods of great prostration and collapse come on. These periods last from one to several days, and are often marked by great enfeeblement of the heart, fever, coated tongue, depression, or extreme irritation of mind, to almost delirium. The breath is offensive, and the bowels are generally constipated at first, and later diarrhoea follows. These attacks are supposed to follow the withdrawal of spirits, and point to some special nerve failure or collapse, and demand active stimulation. In most cases, the desire for spirits is very intense; and the patient is filled with a dread of death if he cannot procure them.

Practically, the effect of spirits seems to lengthen out the collapse; while transient relief follows, the prostration continues. These attacks appear while the persons are taking spirits, and in some cases follow the subsidence of gastritis, or the partial recovery from the immediate stupor of intoxication. The tonic effect of a strong saline cathartic is so marked as to suggest some cause other than nerve prostration from exhaustion.

Another fact quite significant is, that these cases are usually gourmands, and have the delusion that a very hearty meal will prevent excessive drinking; hence eat inordinately at every opportunity, and particularly when suffering from the drink impulse. A common illustration is that of a periodical drinker, who, when the drink impulse comes on, eats voraciously for a day or more, then suffers from a distinct period of extreme prostration, ending in diarrhoea and recovery. In another case the patient has been using spirits freely, and eating inordinately at all times and places. Soon

after admission he is seized with these collapses, and the impression is strong that they arise solely from the withdrawal of spirits. Practically a large dose of calomel and some salines act as a stimulant more promptly than any other remedy. The offensive exhalations and precordial distress are also common symptoms, and in some cases a very marked stupor, or irritative delirium, are associated with it.

In some of these cases these symptoms come on after a night's sleep; in others they begin and gradually accumulate, growing worse from day to day, until the patient goes to bed quite ill. If spirits are given, under the impression that it is nerve failure, temporary relief follows, but the prostration continues, and a low form of fever comes on. After a time profuse perspiration and diarrhea follows, then recovery begins. If the idea of congestion governs the diagnosis, cathartics will be given with marked good results, and the symptoms all disappear in a few days. The most rational inference is that some form of auto-intoxication exists. That digestion is perverted or retarded, and purificative gases are formed and absorbed into the circulation, causing these peculiar toxic symptoms. In support of this inference is the fact that alcohol has a special degenerative influence over nutrition and digestion.

Dr. Kerr, in his work on Inebriety, writes: "The effects of alcohol on the body is one continuous chain of structural changes, and tissue degenerations, capillary paralysis, circulatory tumults, vascular atheroma, cellular decay, membranous thickening, cerebral congestion, and neuralgic proliferation. It is clear from this that the blood will be deprived and loaded with poisonous matters, and auto-intoxication would follow naturally. Malz, a recent writer on this subject insists that auto-intoxication comes most frequently from disorder of pancreatic digestion. The promianes are the special toxic substances which are present. This occurs when the pancreatic digestion is unduly prolonged, and putrefaction follows which extends to the whole process of

digestion along the intestines. The offensive gases that are exhaled and discharged from the bowels confirm this view of these cases. Many cases of inebriety are associated with excessive and irregular use of food. They are called gourmands and epicures, and always suffer from alternate constipation and diarrhea. Such cases may be suspected of auto-intoxications, and should receive from the beginning of treatment free catharsis and diaphoresis. Sudden prostration and mental disturbance should receive the same treatment. Narcotism paralysis, and convulsions in these cases may come from these very obscure toxic substances, and should have similar treatment. Clinical experience shows clearly that the prostration from the removal of alcohol is rarely increased by a free cathartic action, and always lessened by profuse sweating, as in a Turkish bath. The practice at sea of purging all persons who come on board intoxicated or suffering from delirium is followed by the best results. This method of treatment promises much in a certain number of cases, and should receive the most careful attention of all practical men in this field. Auto-intoxications among inebriates are very likely to exist, and should be suspected and looked for in most cases.

COFFEE INEBRIETY.

Dr. Mendel of Berlin, Prussia, has lately published a clinical study of this neurosis, which is growing rapidly in this country. His observations were confined to the women of the working population in and about Essen. He found large numbers of women consumed over a pound a week, and some men drank considerable more, besides beer and wine. The leading symptoms were profound depression of spirits, and frequent headaches, with insomnia. A strong dose of coffee would relieve this, for a time, then it would return. The muscles would become weak and trembling, and the hands would tremble when at rest. An increasing aversion to labor and any steady work was noticeable. The

heart's action was rapid, irregular, and palpitations and a heavy feeling in the precordial region were present. Dyspepsia of an extreme nervous type was also present. Acute rosacea was common in these cases. These symptoms constantly grew worse, and are only relieved by the large quantities of coffee, generally of the infusion. In some cases the medicine was used. The victims suffer so seriously that they dare not abandon it for fear of death. Where brandy is taken only temporary relief follows. The face becomes swollen, and the hands and feet cold, and an expression of dread and agonizing sufferings over the countenance, only relieved by very strong doses of coffee. In all these cases, acute intoxications are likely to appear any time. An injury of any part of the body is the starting point for inflammations of an erysipelatous character. Melancholy and hysteria are present in all cases. In this country the coffee drinker after a time turns to alcohol and becomes a constant drinker. In other cases opium is taken as a substitute. Coffee inebriates are more common among the neurasthenics, and are more concealed because the effects of excessive doses of coffee are obscure and largely unknown. Many opium and alcoholic cases have an early history of excessive use of coffee, and are always more degenerate and difficult to treat. A very wide field for future study opens up in this direction.

The hall was crowded to overflowing, eloquent men and women urged with contagious earnestness the power of the pledge and moral suasion, and the need of absolute prohibition to be reached by party politics. One square away was a police court, and while this meeting was in progress, ten men and women were sentenced to jail for excessive drinking and crimes associated with and springing from it. The severity and harshness of the judge, and the depressed, diseased victims that passed before him (some of them many times before), was a scene almost barbaric in its stupidity and misconception of the victims and the object of the law. Over

in the hall all the interest and nebulous eloquence was equally barbaric and fatal in its profound misconception of the inebriate and his malady. These two scenes represent the moral and political efforts, and the legal means to prevent and cure the inebriate.

Inebriates are always dangerous subjects to administer ether or chloroform for anaesthesia. In all cases the heart is weakened, and fatty degeneration of various degrees is present. Any substance which lowers its action is perilous, because of the inability of the heart to recover, and the tendency to paralysis. But drinkers have always fatty heart, and sudden paralysis is likely to appear with the first inhalation of chloroform. In chronic cases of inebriety, where extensive organic changes have taken place in the brain and spinal cord, paralysis of the respiratory centers occurs first, and respiration stops before the action of the heart. In such cases artificial respiration may prevent death if promptly used. In all cases a sudden checking in respiration and heart beat where ether or chloroform are used is a danger signal of the gravest importance.

We have always deplored the necessity of some notice of the many papers and letters of appeal and advice sent us constantly for publication, the authors of which are unacquainted with our work and journal, and have a very limited conception of scientific study of the inebriate. We always reply personally to the many excellent clergymen and philanthropists who urge us to publish this or that view of the causes and remedy of inebriety. But when physicians who are supposed to have some scientific training send to this journal papers half moral and religious, reaching the most dogmatic conclusions from statements that have no foundation except that they were made by the great Dr. So-and-So, we put them promptly in the waste basket. Dr. _____ of New York, of Philadelphia, of Boston, or Chicago, may be very

eminent in the profession, and have a very wide knowledge of diseases, and be absolutely ignorant of inebriety. Unfortunately, some of these eminent men assume to have a full knowledge of the causes and remedies of inebriety, mostly evolved from their inner consciousness and the statements of some clergymen. While we are pleased to see the leaders of the professions discuss inebriety, all their views and statements can have no value only as they approach the realm of scientific accuracy. Conclusions alone, with no statements of facts on which they are based, are nonsense. A few facts and minute degenerate conclusions, are also nonsensical. Some random statements that appear to be facts, and strong conclusions from them, are equally obscured. Dr. ———'s opinion is of no value unless he has special training and knowledge of the subject. The isms which surround the drink problem and the means of cure and prevention, are often nothing but "fog banks." The literature of the subject published by temperance moralists, and many of the papers coming to this office, could all vanish in some Alexandrian conflagration, and leave the world better and the progress of truth higher up in the development of the race.

The great masses of humanity dread change and innovation of present thoughts and beliefs. It is so much easier to accept the current theories of to-day, and bury ourselves in the common customs and faiths of the crowd, and hide our mental identity with parity, sect, and theories of the hour. Originality must be shunned because it means change and mental effort to readjust ourselves to the new conditions. This is the spirit of humanity to oppose unlikeness to anything fixed in the present. Thus every new truth is greeted with a storm of indignation and opposition, because it breaks up the current philosophy, theology, and medical practice of to day. The tendency of the mind, like the body, is to settle in some fixed line of thought. The medical man, like the layman, accepts conclusions as final and beyond question,

and is alarmed at any new views or new conceptions of truth. Such men are violent opponents and denounce every new advance; they condemn our work, condemn our journal, condemn our motives and facts. Such men are clearly great opponents of all truth, and without any conception of the spirit and purposes of life are blind leaders of the blind. They are mental types of reversion that live alone, the most primitive lines of growth; a mere reflection of the past generation, and the creatures of the hour, whose life and death are of little interest in the evolution of mankind.

MORTALITY OF DEALERS AND USERS OF ALCOHOL.

Dr. Baer of Berlin has made a study of some official returns of the mortality and longevity of persons who manufacture and handle wine, beer, and all forms of alcoholic drinks. These studies embrace fourteen thousand and two hundred males, of whom over thirteen thousand were over twenty-five years of age. The following tables are the results of this study:

Temperate persons at —	Expectation of life	Persons who handle spirits
25 years of age,	32.08 years.	26.23 years.
35 " " " "	35.92 " "	20.01 " "
45 " " " "	39.92 " "	15.19 " "
55 " " " "	44.45 " "	11.16 " "
65 " " " "	49.62 " "	8.04 " "

CAUSES OF DEATH AMONG THE CONSTANT USERS AND VENDERS OF ALCOHOL.

	Average mortality of general male population.	Mortality of alcoholic vendors.
Brain disease,	11.77 per cent.	14.43 per cent.
Tuberculosis,	30.36 " "	36.57 " "
Pneumonia and pleuritis,	9.63 " "	11.44 " "
Heart disease,	1.46 " "	3.29 " "
Kidney disease,	1.40 " "	2.11 " "
Suicide,	2.99 " "	4.02 " "
Cancer,	2.49 " "	3.70 " "
Old age,	22.49 " "	7.05 " "

Clinical Notes and Comments.

LUNIER PRIZE.

The French temperance society against the use of alcoholic beverages have received from Mrs. Lunier one thousand francs, to be called the Lunier prize, to be given to the author of the best essay on the following questions: *What are the consequences of hereditary alcoholism, and what are the best means of prevention, or means to limit or lessen its effects?* Authors are expected to follow out the lines of inquiry suggested in Lunier's work "on alcoholisms."

The society does not limit this study and research, but wishes it to embrace all the questions of moral, social, and therapeutic means, for prevention and restoration of inebriety. The society will accept parts of printed works, as pamphlets on this topic that have appeared before January 1, 1890, associated with what has been written since this date, to compete for the prize. All manuscripts should be received before December 31, 1890, and should be addressed, Dr. Motet, secretary, general of the French temperance society, 161 rue de Charonne, Paris, France.

ENCOURAGING SCIENCE.

The Vermont Microscopical Association has just announced that a prize of \$250, given by the Wells & Richardson Co. the well-known chemists, will be paid to the first discoverer of a new disease germ. The wonderful discovery by Prof. Koch of the cholera germ, as the cause of cholera, stimulated great research throughout the world, and it is believed this liberal prize, offered by a house of such standing, will greatly assist in the detection of micro-organisms that are the direct cause of disease and death. All who are interested in the subject and the conditions of this prize, should write to C. Smith Boynton, M.D., Secretary of the Association, Burlington, Vt.

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 microphotographs 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 Remsen Street, Brooklyn, N. Y.

JOHN E. WEEKS, M.D.,

43 West 18th Street, New York.

RICHMOND LENOX, M.D.,

164 Montague Street, Brooklyn, N. Y.

BROMINE-LITHIA WATER.

A fine Lithia spring has been known for some time at a little hamlet called Lithia Springs, in Douglass Co., Georgia. Recently an analysis has revealed the fact that it is the only spring known to science which contains Bromide of Potassium and magnesia; this is combined with lithium, strontium, and iodide of magnesium. The effect of this water is both tonic and sedative, and in the army of nervous cases it gives promise of being a remedy of wonderful power. Theoretically a natural combination of the bromides with lithia and the iodides would be a remedy of great value in a large number of cases. Practically, it has more than fulfilled these expectations, and although this water has been very recently introduced, there are many reasons for supposing that it will become the most widely used of any medicinal water known. Our personal experience in three cases of alcoholic rheumatism and neuralgias is very satisfactory so far, and we hope to announce in the future that at last a remedial water has been found which can be given to all nervous exhausted cases with great certainty as to the results. As the Hot Springs of Arkansas is the great resort of rheumatic and syphilitic cases, this bromide spring of Georgia may become the great resort of neurotics of all kinds. It is perfectly clear that under any circumstances this water will become a popular remedy, and these springs a famous resort in the near future.

In 1888 two papers were read on the Jurisprudence of Inebriety, before the section of Medical Jurisprudence of the American Medical Association. The next year three papers were presented on the same topic, before this section; and this year, five papers are announced on the programme. The following are the titles:

"Responsibility of the Dipso-maniac; by Dr. T. B. Evans, Baltimore, Md."

"Psychopathic Sequences of Hereditary Alcoholic Intailments; by Dr. C. H. Hughes, St. Louis, Mo."

"Medico-Legal Significance of Facts Common to Insanity and Inebriety; by T. L. Wright, M.D., Bellefontaine, Ohio."

"The Medico-Legal Relation of the Physician to the Sabeon and Inebriate; by Dr. I. N. Quimby, Jersey City, N. J."

"Some New Medico-Legal Questions Relating to the Inebriate; Dr. T. D. Crothers, Hartford, Conn."

The *Journal of Psychology*, under the care of President Hall of Clark University, is the only American journal on this subject, published. It is invaluable to all experts of mental disease.

The *Alcrist and Neurologist*, edited by Dr. Hughes at St. Louis, is of great practical value to all students of mental diseases. The editor is one of the most accomplished psychologists of the country.

A lithographic group of nine of the most distinguished physicians who have made inebriety a special study, has been made by the Photo-gravure Co. of New York City, and are for sale at this office. They are mounted on cardboard suitable for framing, and are sent post-paid for one dollar to any address.

The *Medico-Legal Journal*, under the charge of Clark Bell, Esq., is building up the science of medical jurisprudence very rapidly. Each number is a volume of most excellent matter of itself.

Sent for a bottle of Warner's Bromo-Potassa; it has a peculiar value in the alcoholic and opium inebriate, and often will relieve the intense neuralgia better than any other remedy.

The Medical School of the Vermont University, under the care of Dr. Grinnell, as Dean of the faculty, has become very popular among medical men, and the increasing crowds of students make it one of the great medical centers of the country.