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THE JOURNAL OF INEBRIETY

PUBLISHED BI-MONTHLY

OFFICIAL ORGAN OF THE AMERICAN MEDICAL SOCIETY FOR THE STUDY OF
ALCOHOL AND OTHER NARCOTICS. EDITED BY T. D. CROTHERS, M. D.

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Volume 35

SEPTEMBER-OCTOBER, 1913

Number 2

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Several important reports of recent researches will be made. The public are cordially invited.

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Published Bi-Monthly

T. D. CROTHERS, M.D., Editor

The Therapeutic Publishing Co., Inc., Publishers

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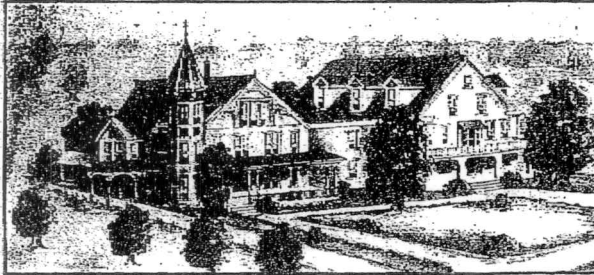
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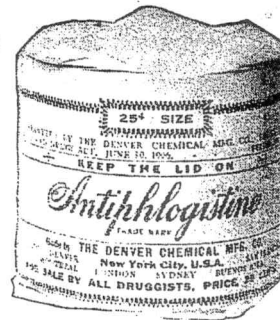
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THE JOURNAL OF INEBRIETY

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To whom all business communications, relating to subscriptions and advertisements should be addressed.

All exchanges, contributions, reports and matter pertaining to the Journal should be addressed to the Editor, Dr. T. D. Crothers, Hartford, Conn.

Editorials

ALCOHOL, THE GREAT MEDICAL TOPIC OF TODAY.

For forty years the National Temperance League of England have served a temperance breakfast at the annual meeting of the British Medical Association, at which physicians met and talked over the alcoholic problem. At first it was a small affair, attended by only a few physicians. For the last quarter of a century, it has become one of the great social features of these meetings of the Association.

The President presides and short addresses are given by leading medical men on alcohol, each one expressing his exact thoughts and opinions concerning this subject.

While a large proportion of the profession in England are moderate drinkers, they have shown great interest in the medical discussion of the alcoholic problem, and taken very active parts.

The Breakfast at Manchester, England, in 1912 was a very enthusiastic one and the occasion was made prominent by 32 physicians who spoke later in different halls and churches in the neighborhood of Manchester, on the alcoholic problem. This was promoted by a local committee, and was attended by very large audiences, and the speeches were reported in full.

This year, the British Medical Association met at Brighton, and the usual Temperance Breakfast was attended by a larger number of the profession, who spoke very emphatically on the alcoholic problem. Outside of this occasion a Committee arranged for speakers in 36 different halls and churches, in Brighton and that neighborhood, which

were occupied by medical men exclusively. The interest was even greater than at Manchester, and the discussions were listened to by very large audiences.

The great International Congress that met in London with its 8000 members from all over the world was presided over by Sir Thomas Barlow. In his inaugural address he referred to alcohol as one of the great topics for medical study in the future, and was vigorously applauded.

A Temperance Breakfast was held, at which some of the leading physicians of the world were present. Sir Thomas Barlow clearly outlined the great questions concerning alcohol and its relation to the race.

He was followed by several very eminent physicians who not only endorsed what he said, but affirmed that the time had come when the medical profession must study the alcoholic problem with the same accuracy as any other topic in medicine. These meetings show a great revolution in public sentiment abroad.

THE SHORT CUT CURES FOR INEBRIATES.

The great teachers and leaders long ago decided that no permanent cure of alcoholism or inebriety could be attained in less than six or twelve months, and sometimes longer.

When the gold curers came, it was announced that four weeks by their special methods were sufficient to reach the termini of good health and absolute cure for the future. From that time, the four weeks route was very popular and a large number of persons traversed it.

Then the travelers became less numerous and finally they were nearly all commuters who had been over the road before. Many of them were regular patrons.

While a great many of them disappeared, their places were not filled by new tourists in this field. Recently a new, still shorter and more direct cut has been opened, called the "Three Day Cure." Like the great routes of others, it was discovered by unknown men and found to be a perfect road, endorsed by clergymen, laymen and a few doubtful doctors.

In the prospectus it was declared that this was the best route that had been found, and was the most perfect, permanent and certain of them all. While the time was cut down from thirty days to three, the expense remained the same with a slight addition for board and lodging. The time tables and prospectus were very emphatic in assuring their custom-

ers that the journey could be made in three days' time, and like Bunyan's Pilgrim, long before the end was reached, all the burdens of the past would roll off and once more they would come to their own and start out as strong, temperate men. This was so startling that many persons tried it. After buying the through tickets, the traveler is assured that all spirits will be furnished ad libitum. Very soon he becomes intensely ill, is nauseated, vomits, purges and sweats. The more spirits, the more intense the suffering, then the spirits become nauseating, but the regulations require him to drink still more. Then finally the odor and sight of them become painful. A profound mal de mere comes on, in which all regard for the present and future is lost. Then more drugs, baths and cathartics. The hours go by and finally a troubled sleep follows from which he awakens with the terminal stage in sight. The train slows down as the station comes in view and the sun breaks out again with a spring-tide look and the journey is ended. In 72 hours he has crossed the desert regions and bad lands and reached the smiling eldorado. He is cured. He is saved, and never more will he drink again. He is told by the authorities, and the impression is profound on his mind, that alcohol will never again cross his pathway. However confused he may be, the one overjoyous thought fills him with gratitude that all further use of spirits is impossible, and that he is now beyond temptation and any possible need of repeating this experience. By and by these impressions begin to fade a little, and he experiments to find out whether they are real or not. Then they vanish and he is back again at the beginning of the journey.

Then he becomes a commuter and repeater and goes over the road again. Finally some day he is missing and his travels by the fast route are ended. This last short cut to health is literally the last journey of life for a great many persons. They have reached the terminal station of supposed health, but find themselves burdened with new disabilities from which they are never able to extricate themselves. The commuters of these short cuts will try other and longer routes, and the popularity of this new road to health is not likely to increase as the years go by.

INEBRIETY AT THE CHAUTAUQUA MEETINGS.

In the programmes of the various Chautauqua meetings in the middle west, inebriety and alcoholism seem to be lost topics and with the exception of an occasional lecture by a professional propaganda, there is little or nothing heard.

Many other topics interest the public, Roman Civilization, Literary Characters, Music, Art, and far-away topics seem to be served up in great abundance. The professional lecturers in the temperance field have no doubt over-done the statistical side by their very startling statements and their inability to offer any practical remedy, except signing the pledge and voting for a party.

The fact that inebriety and alcoholism is responsible for fully fifty per cent. of the disease and mortality of the country and that it is curable and preventable, seems not to have taken hold of the public mind. One would think that there is no topic more vital and important for public educational institutes, than the prevention of these diseases, and building up means and measures that will restore the broken down armies of drink neurotics.

The Chautauqua circles would undoubtedly welcome any measures and educational means that could be applied in the home and in the shop, for taking away the exciting and predisposing causes, and this would give a new force and value to summer educational schools. The time is coming when public health lectures along these and other lines will take precedence over every other topic, from the pulpit or platform. There are men who could fill such places and who would prepare themselves for it, if their services were called for.

This is one of the revolutions that will appear in the Chautauqua circles of public instruction and the elevation of the race. A recent English writer asserts that the highest kind of religious culture that will be called for in the near future will pertain to the body, how to build it up and develop it so as to give the mind and soul the power of expression and capacity to live on the lines intended by the Creator.

REPORT OF THE INSPECTOR OF THE ENGLISH INEBRIATE ASYLUMS.

For many years we have noticed the various reports of the Inspector, Dr. R. W. Branthwaite, one of the ablest and clearest physicians in this field of special study. While these reports were very minute in statistical studies and contained strong suggestive conclusions, they were not satisfactory to an American reader.

The Inspector was evidently hampered by conditions that were largely obscure and by public sentiment, official conservatism and customs and laws that are unknown to this country. It was necessary to sail close to the wind and avoid radicalism or assertions that the author-

ities were not willing to admit. Hence these reports have lacked in direction and study as well as suggestions of what could be done. The last report which brings the progress of the work up to 1911, presents about the same facts and questions, and pleads for certain changes which would be considered unquestionable in this country.

The Government has laid down rather arbitrary rules, many of them quite inflexible as to the organization and control of these institutions, and then curiously enough, refuses to give them any support from public funds, forcing them to depend upon the income of patients and charities in general. This of course greatly limits their work and prevents their development, except in a most narrow way.

The Doctor asserts again with great clearness that inebriety is a disorder of the body and mind and that the victims have a constitution and largely inherited psycho-neurotic fault, and lack of psycho-neurotic integrity, and reasons that they should be cared for as invalids, and subjected to treatment much the same as the insane are.

This view is amplified with great clearness and is apparently addressed to a large number of persons who do not believe it. He argues that the legal conception of inebriety and the methods to treat it are ineffective and practically increase the disorder, rather than diminish it. He states that one of the theories still entertained by authorities, that drunkenness is a sin or a vice is based on the theory that intemperance is regarded as a natural failing, and alcohol as a natural beverage. Forel calls this statement absurd and declares that you might as well call antipyrin natural or a lamp post, or any object in which there is associated drinking.

Dr. Branthwaite declares that the possibility of cure depends on awakening normal, dormant self-control or stimulating by exercise weakened self-control. This gives the best chance of success. In explanation of the low recovery rates he declares that there are no well thought out remedies and plans of treatment in the different institutions. The only thing upon which they all agree is the restraint, and even here there is great fear of destroying the liberty of the patient, taking away his power of self-control.

Concerning the causes he is very clear in describing it as constitutional peculiarity and acquired desire for intoxication, and lack of self-control. He asserts that the long continued use of spirits diminished the power of resistance and free choice, the remedy for which is long detention and control of their life and surroundings.

The most hopeful cases are those in the early stages. The most hopeless are those in which constitutional defects both inherited and ac-

quired have produced degeneracy beyond the point of possible restoration. He urges that there is a large middle class that could be permanently restored, if taken to institutions and properly treated, also that there is a large, ever-increasing incurable class that ought to be permanently housed to protect themselves and the community. He concludes that the future is very hopeful and that public sentiment is steadily growing to recognize the need of positive physical treatment.

To the American reader this most practical plan of having all institutions under Government supervision and control, offers one of the very best possible chances for organized scientific treatment. In the future this will be made practical in this country. At present we can only watch the experiment made in England with the keenest interest.

To Dr. Branthwaite we send our warmest good wishes for his struggling effort to extricate the great problem of inebriety from the traditional theories of the past, and we shall hope that he will be long spared to build up on the good foundation he has laid a most enviable record of the progress and work.

STUDY OF ALCOHOL.

At the annual meeting of the American Academy of Medicine at Minneapolis, Minn., last month, the Physical Basis of Crime was the subject of twenty-four different papers. It was startling to note that alcohol was most prominently mentioned as the cause of degeneration, criminality, and all the great evils that imperil civilization. Some authors thought syphilis was more far-reaching than alcohol, and all agreed that together they constituted the greatest perils, and were responsible for the largest amount of degenerates.

The Public Health Sunday, under the auspices of the A. M. A., was noted for the great prominence of alcohol as a factor in disease, mortality, and general weakness. Eighty-seven churches in Minneapolis and St. Paul were opened morning and evening to lectures on public health by physicians.

This was one of the most startling efforts to popularize the great facts of science and educate the public to put into prominence the truths that are recognized more and more every day.

The following week the Chicago Medical Society discussed mental diseases and neurological subjects for three days, and here it was noted that alcohol and syphilis were repeatedly mentioned as causes which could be eliminated, and at all events were traceable in the diseases of the brain and nervous systems.

At the meeting of the A. M. A. four hundred and twelve papers were presented on all branches of medical subjects. The same fact appeared here in the casual or direct references of authors to the use of alcohol, in complicating the diseases present.

As usual, Drs. Crothers, Marcy and others presented papers on the alcohol problem or called attention to the necessity of recognizing this factor in the study of disease.

A NEW METHOD OF CONCEALING DRUGS.

In New York certain drug takers can buy readily their supply of drugs at a certain restaurant, in the form of sandwiches. These sandwiches are sold the same as others, only instead of costing 5 or 10 cents, they are 35 cents and upwards. It is noted that the customers take these high-priced sandwiches home, wrapped in tissue paper. Morphine is concealed in thin tissue paper, covered with butter, and spread between the bread. Sometimes the person will be seen eating some of the sandwich, but usually he is very secretive about this.

The restaurants where these are sold are second-class places without anything unusual or strange, except to the sharp eye of a judge of human nature, who discovers a large number of neurotic, broken-down, haggard-looking men, who come regularly at meal time, take a cup of coffee, and buy a sandwich which they carry home with them.

Everything is done quietly; there is nothing to indicate the real business. The proprietor is a pale, nervous-looking man, who takes these sandwiches from a glass-covered case, where they are wrapped up in tissue paper in the ordinary way.

A man who claims to know, affirms that this restaurant man is a regular customer of one of the great wholesale manufacturing houses of morphia, and buys from \$200 to \$300 every short time. The manufacturer understands that he is a druggist, and as long as he purchases for cash such enormous amounts gives little or no concern to where it goes.

The waiters seem oblivious and there is nothing to indicate that they are aware of the purchase of these high-priced sandwiches. How long this has been going on no one knows; in all probability the proprietor will change the location and be found at another restaurant in another part of the city, and when his customers begin to come in too freely he will move on.

THE OPIUM REVOLUTION.

The agreement between India and the other nations, not to sell China any more opium, after 1916, is likely to come into effect sooner. China agreed to take a certain number of chests of opium a month, until the termination of the agreement. During the last few months, there has been a great surplus of India opium in Chinese ports, and the price has dropped. In the meantime, the Chinese Government is pursuing a most drastic policy of suppressing the poppy growth and opium smoking.

This, with the falling demand and huge accumulations on the market produces a panic in the Indian Government. Two hundred thousand acres of poppies in India, about the extent of the cultivation, are becoming more and more unprofitable.

The under Secretary of India announced in the House of Commons recently that the whole trade was about to come to an end. The International Convention of twelve great nations of the world is about to meet again at The Hague, and urge the suppression of opium and its alkaloids and fix measures and co-operative efforts to restrict its legitimate use and manufacture.

The cutting off of 2000 chests a month of opium will practically change the traffic, and other means must be devised and other markets opened. It is reported that Germany will take the surplus product of opium for the manufacture of morphine, and thus will control the market of the world.

The trade is evidently passing, and poppy growing in India will be restricted to the demands for home consumption. There is something very promising in the eagerness with which all nations unite in suppressing the growth and use of this narcotic.

MISLEADING STATISTICS.

Some authors have abnormal faith in the statistics concerning inebriety and seem to show very little interest to verify the accuracy of them. Asking a dozen or more inebriates why they drink, and what they think about the drink craze is about of as much value as inquiries of the insane concerning the accuracy of their delusions, would be.

One man, who evidently has much to learn yet on this subject gives elaborate studies of fifty inebriates, who each declare that he had no particular craze for drink and could have stopped at any time, but for reasons unknown he did not.

The author is convinced that these statements disprove dipsomania or an irresistible desire for the taste and effects of alcohol. He reiterates

this with a confidence that can only come from a very limited experience and acquaintance with the subject. Another author equally dogmatic has seen two persons, who after many years of the excessive use of spirits became converted, and totally abstained for many years, until death. To him this evidence is unmistakable and proves the power of conversion and the value of a faith in higher life.

A very eminent clergyman promulgated the same theory with most enthusiastic positiveness. His data was probably more extensive, but was equally misleading. It was the study of individual cases without any possible comparison with others. Mr. Moody asserted that the grace of God would cure every drinking man, and yet his meetings furnished the most unmistakable evidence of the failures of conversion alone. Hundreds of inebriates abstained after experiencing the change of conversion, and posed as examples, but a few weeks or months later, they relapsed and like the gold cures that claim 99 or more per cent. cured, after six months or more the number dropped down to 10 or 15 per cent. and at the end of two or three years it went down to 2 per cent.

Clergymen and dogmatists who assert positively the results of certain particular means and appliances fail to make the scientific tests a confirmation of their original statements.

Horse-serum, supposed to be produced by the blood of an alcoholic transmuted through horses, and then extracted, was claimed to be a specific for inebriety and some very remarkable statements of experiences followed, but when submitted to an accurate test failed. The fruit and orange cure have had advocates, who cited experiences and histories of cases that seemed to sustain their assertions, but later they failed.

The early literature of inebriety had a great many startling statements which have disappeared in some of the more recent publications. The subject was evidently greater than the author and his conclusions were nothing but personal opinions drawn from a very limited experience.

Frequently authors send to this office papers, giving astonishing results from means and measures that seem insignificant and unknown in practical experience. It is found great wisdom to hold these conclusions in abeyance and wait until they are confirmed by a larger and more accurate study before giving them to the public.

The experimental stage of the treatment of inebriety is a hopeful one, but one full of pitfalls and confusional regions that have no direct paths to scientific accuracy. Hence the true scientist should avoid going on record in favor of this or that measure, except as an experimental means, and his conclusions should be stated in a very conservative way.

Original Papers

PARENTAL ALCOHOLISM AS A FACTOR IN THE MENTAL DEFICIENCY OF CHILDREN: A STATISTICAL STUDY OF 117 FAMILIES.

By Alfred Gordon, M. D.,

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Under the influence of the teachings of Morel during the last century heredity was considered as the principal factor in the genesis of mental affections and of various forms of mental deficiency. We have learned, however, since that hereditary influence *per se* is not sufficient to create mental abnormalities. It is true that the morbid tendency produced by heredity cannot be suppressed; nevertheless, it is possible and sometimes not difficult to modify the organization of an individual. The latter is a complex product of hereditary and environmental factors. It is well known that environment determines to a certain degree morphological and physiological variations. Experimentally it has been demonstrated that plants transferred from a valley to the summit of a mountain become acclimatized and assume a different appearance. In the animal kingdom, species undergo evolution and transformation under the influence of the exigencies of the environment. Certain organs, for instance, atrophy because of inactivity, while others develop by virtue of their functioning.

Anatomical physiological, and psychological characteristics are the resultant of two kinds of influences: heredity and environment. The latter corrects and modifies the hereditary tendencies. A pathological heredity by itself is not necessarily fatal. It is not usually transmitted in its pure forms. Most frequently what is inherited is a certain morbid tendency, but the latter can be modified by other influences which arise during the developmental period of life.

Confining the consideration of this subject exclusively to the field of morbid psychic phenomena, we must admit that some difficulties are encountered. In any given case of mental abnormality it is quite difficult to demonstrate with incontrovertible evidence to what extent the latter is influenced by heredity and to what extent by environmental fac-

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tors. In statistical studies one must not neglect to separate these two etiological causes. Since this is not always possible, one must be cautious not to become too exclusive in ascribing to one of the two factors an omnipotent role.

Clinical observations show that, while the ensemble of environmental influences may orient individual predisposition, inclination, and aptitude so as to impress upon the individual certain determined characteristics, nevertheless the nervous and mental makeup of the given person, determined by powerful hereditary factors transmitted from several generations, remains and always will remain a very powerful etiological cause. In collecting data concerning heredity too great caution cannot be taken, as the obstacles are very serious. No matter how careful one may be in obtaining information from the family, certain reservations must be made in regard to uncertainties and the tendency to restraint in some members of such families in revealing matters concerning individual characteristics. It is also exceedingly difficult to proceed to minute investigations of all the descendants of the patient. Many a detail escapes our notice. Another source of error which particularly concerns alcoholics is found in many diseases which are traced in members of the family as well as in the offspring. Many factors consequently present a possibility of creating pathological conditions outside of alcoholism, so that it is difficult to ascertain which belong to alcoholism itself. Individuals suffering from chronic alcoholism are not infrequently the descendants of degenerates, of the insane, so that observations of this character present still greater difficulty. What can statistics teach in such cases?

Despite the obstacles mentioned, in spite of other degenerative elements observed in families and superimposed on alcoholism, in spite of the frequent association of alcoholism with other serious pathological tendencies, it is possible, nevertheless, with a certain degree of accuracy to obtain sufficiently precise information from a considerable number of observations.

The present study of 117 families extends over a period of eight years. During that time I endeavored to collect data concerning all the cases that came under my observation and succeeded through persistent efforts in various directions in tracing the characteristic tendencies of some members of each family through three successive generations. Cases with various constitutional diseases, such as diabetes, pernicious anemia, tuberculosis, neoplasms, chronic rheumatism, elicited in the family histories have been rejected and are not included in the series under consideration. Out of 117 families there are 78 in which alcoholism

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alone could be detected as a hereditary degenerative factor. In the remaining 39 there are 15 with doubtful syphilitic infection and 24 with histories of some mental disorder in some members of each family. The predominant hereditary feature in each of the 39 cases was alcoholism, so that, if the effect of other influences contributed to a certain extent to the pathological phenomena observed in the offspring, the coexisting alcoholism had unquestionably served as the most potent factor to reinforce or accentuate the obnoxious results produced by the pre-existing abnormal tendencies.

The condition of the first generation was successfully investigated in 90 families, that of the second generation in 20, and that of the third generation in the remaining 7.

I. MENTAL DEFICIENCY IN THE OFFSPRING OF THE FIRST GENERATION.

The 90 families furnish a contingent of 200 individuals who are all more or less affected mentally in a quantitative sense of the term. This is certainly an appalling proportion of pathological units produced by alcoholic progenitors. A detailed analysis shows that apart from physical stigmata of degeneracy, such as cranial malformations, strabismus, anomalies of dentition, of the formation of the palate, of the ears, of various parts of the face and spinal column; also anomalies of the special senses,—deafness, mutism; congenital, partial, or complete blindness,—and, finally, various nervous phenomena of paralytic or spasmodic nature,—apart from these physical signs of degeneracy, the 200 individuals engendered by 90 alcoholized parents presented in the most striking manner important varieties of mental deficiency.

Idiocy, imbecility, feeble-mindedness were frequently accompanied by other serious disorders. Epilepsy was the most frequent affection. In 150 of the 200 this disorder existed. In infancy during dentition, convulsive seizures occurred at rare intervals. Later, in childhood and boyhood, typical epileptic seizures became manifest. Epilepsy *per se* is a sufficiently powerful factor to induce an arrest of mental development, but in the majority of the cases the mental degeneracy was evident from early childhood, before the epileptic condition became firmly established. The coexisting epilepsy naturally accentuated the pre-existing condition and interfered considerably with serious attempts to develop the mentality of the afflicted individuals.

Besides epilepsy, other episodic manifestations of morbid mentality were evident. Obsessions, phobias, irresistible impulses, tendencies to criminal acts, are all phenomena very frequently observable in neurotic persons as well as in the feeble-minded. They present no special features as far as the present study of the mentality of a generation cre-

ated by alcoholized parents is concerned. They are mentioned here for the sake of completeness in dealing with the subject. Various manifestations of a vicious character, such as are observed in the so-called moral insanity cases, are also observed in feeble-minded individuals. There is no need to mention the fact that "moral insanity" of some writers is closely and intimately allied to mental deficiency. Indeed, in my opinion, the term "moral insanity" is not altogether scientific, and I believe it only obscures the real issue of the underlying condition. If moral insanity expresses a pathological deviation in the direction of what is considered morality, of conventional laws, this deviation does not constitute a separate form of mental disorder, but abnormal phenomena of the above-mentioned character which occur in all forms of mental derangement, in genuine psychoses, and in all forms of mental deficiency. High, middle, and low grades of imbeciles present among their chief characteristics abnormal moral tendencies. At all events, the latter symptoms were all present in my cases, but there is nothing characteristic to enable us to distinguish between a low mentality in individuals created by alcoholic parents or by parents whose degenerative tendencies originate from other sources than alcohol.

I wish to call particular attention to a special characteristic feature observed in 75 out of the 200 members supplied in the first generation by 90 parents, viz., an extraordinarily great desire for alcohol at a tender age. Some of them commenced to use it at the age of eight and others at the age of puberty. The fact that in addition to mental deficiency observed in children born from alcoholic parents in the first generation a tendency to alcoholism is superimposed presents an unusual interest from the standpoint of hereditary transmission of tastes, passion, and of fatality of the laws of hereditary. It tends to prove the gravity of alcoholic intoxication, which from the first generation became so disastrous in its direct consequences. If a drinking father is capable of creating a drinking son, the situation is unquestionably serious, as in such cases the vicious circle may continue indefinitely unless vigorous measures are promptly applied to interrupt it.

The alcoholic children are subject to the same disorders produced by alcohol as the alcoholic parents. Thus, delirium and confusion with visual hallucinations occurred in my patients a number of times. A stuporous state was frequently observed for weeks following the use of small quantities of alcohol. Stupor was particularly marked in the younger children, delirium in the adults. The tendency to commit crimes is quite pronounced; attempts at homicide are more frequent than at suicide.

Alcoholism in feeble-minded individuals assumes a somewhat different aspect from that in otherwise normal persons. It seems that the original mental deficiency renders the alcoholic more brutal, more vicious, less responsive to external influences, more intensely delirious, more confused, and more stuporous than a normally constituted individual who becomes intoxicated. The inherent mental deficiency lays a special mask over the individual when he uses or abuses alcohol. It is not a special or a new form of alcoholism that it creates, but an alcoholism the individual features of which are in every direction peculiarly intensified, and lead to graver consequences.

II. MENTAL DEFICIENCY IN THE OFFSPRING OF THE SECOND GENERATION.

This study embraces 78 individuals whose parentage could be traced to 20 families two generations back. Very careful inquiries and very cautiously gathered data led to the discovery of marked alcoholism in the 20 grandparents. The 78 living grandchildren presented mental abnormalities of a very grave nature. If a comparison be drawn between the degree of mental deficiency in the individuals of the first generation studied above and that in the members of the second generation, we find a decidedly lower mental status in the latter than in the former. There were more idiots than imbeciles and more imbeciles than backward or feeble-minded individuals. Low moral sense, vicious tendencies, outbreaks of extreme anger, destructiveness, irresistible impulses for all sorts of crimes, were all exceedingly pronounced. In adults of this category may also be mentioned, in addition to the above symptoms, perverted sexual sense and act, theft, vagabondage, debauchery, precocious prostitution, frequent sojourn in prisons, finally alcoholism. A large number of the 78 individuals were committed to asylums because of frequent outbreaks of delirium and confusion. A number of them spent considerable time in prison because of a great variety of offenses.

It is interesting to observe that the majority of these 78 individuals were orphans (56), their parents having died early. Painstaking investigation showed that the parents were all mentally abnormal: some were imbeciles (35), others insane (25), although a few (18) were considered normal. As to the latter group, if the information concerning their normal mentality is correct, their children's degenerative state can be traced to the grandparents, whose alcoholism was an averred condition. The phenomenon of transmission of a hereditary morbid tendency to the second generation without the interference of the first generation is, generally speaking, not very rare. On the other hand, in my series of cases the supposed normal mental status of the parents could be ascertained only from lay relatives, by whom one could not expect that

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feeble-mindedness in a slight degree would be observed. Frequent intoxication and in some of the cases actual craving for alcohol were ascertained at an early age. From this standpoint the cases do not differ from those of the first generation studied above. Physical stigmata of degeneracy were equally observed in almost all the cases of this series. A great many of them presented various nervous manifestations not infrequently encountered in the lives of feeble-minded individuals, viz., convulsions in infancy, epilepsy later; also attacks of meningitis. In seven a history of hydrocephalus could be detected.

To sum up, the mentally deficient individuals of the second generation in my study presented the same multiplicity of manifestations as those of the first generation, but with greater intensity and depth. The mentality was apparently more seriously deficient and the attempts at correction were met with greater difficulty than in the first case because of the gravity of the nature of the pathological condition. It is also to be observed from a few of my cases that alcoholism in grandparents may lead to mental and physical degeneracy in grandchildren without apparently affecting, or at least not to any great extent, the direct parents.

III. MENTAL DEFICIENCY IN THE OFFSPRING OF THE THIRD GENERATION.

This study comprises 21 individuals originating as a third generation from seven families known to be alcoholic. In all of them various mental abnormalities could be traced through the two preceding generations. Great difficulty was experienced in collecting correct data, but with persistence the endeavor proved to be quite successful. Imbecility with or without epilepsy was the main feature of these cases. Other manifestations incidental to imbecility and described in the two preceding sections were present here. These cases present a remarkable chain extending back three generations, a chain which is uninterrupted and uniformly covered by degenerative elements, and which has its original source in great-grandparents who were suffering from chronic alcoholism. It is true that in the members of the intermediate generations alcoholism was present and greatly added to the degeneration created by original alcoholic sources. The seven cases of this series, though few in number, are, nevertheless, strikingly illustrative of the manner in which a complete mental debility is established by serial transmission of a deleterious taint which becomes more and more pronounced in each successive generation.

CONCLUSION.

This study embraces 208 cases of mental deficiency observed in 117 families. This number may at first sight appear small, but if we remember that only the living members were taken into consideration;

that the mortality in each of the families studied was great; that death occurred at a very tender age; finally if we consider the fact that some children died early in life, and that the living presented mental and physical stigmata of degeneracy, we must logically conclude that the effect of alcoholism on the offspring is most disastrous. Confining myself to the chief subject of my investigation, viz., mental deficiency produced by parental alcoholism, I am led to conclude from this painstaking study, carried on during a period of eight years, that alcoholism is unquestionably one of the direct causes of imbecility, idiocy, and feeble-mindedness in the offspring. The pictures built up from the collected facts show that alcoholized individuals procreate degenerate and mentally feeble children. These in their turn, if permitted, continue the chain of the pathological condition, and so on endlessly unless the chain is interrupted. One such family, for example, is capable of throwing into the community dozens of useless or dangerous individuals, who if capable of multiplying will produce their like. The mental inferiority of such units leads the community backward, and its intellectual *niveau* is thus lowered.

A mentally deficient individual is unable to adapt himself to his surroundings, and his efforts in that direction are futile. Moreover, he becomes dangerous to society, as his conceptions of obligations and of conventional laws are primitive, undeveloped, and frequently perverted. A large proportion of these individuals is to be found in houses of correction, in prisons. The burden of keeping them and caring for them devolves on the community. Hence arise enormous losses from a financial and social standpoint. If by depopulation is meant loss of individuals not only in a quantitative, but also in a qualitative, sense, alcoholism is undoubtedly one of its causes. It leads to a degeneration not only of the individual, but also of the species; it is dangerous to society, as it produces a slow and progressive deterioration of the individual and an intellectual and physical sterility of the race with all its social consequences, viz., lowering of the intellectual status and depopulation.

Quite recently, in England, the Interdepartmental Committee on Physical Deterioration presented to the House of Commons a report on the effect of alcoholism. Elderton and Pearson, the reporters, expressed themselves in the following astounding manner: "Alcoholism does not

appreciably affect either the efficiency or wage-earning power or the physique and ability of their offspring." They claim that a drunken workman is of a little more value than a sober workman. Time and space do not permit of entering into a discussion of the most inaccurate and unscientifically conducted investigations of those two writers. Errors not only in judgment, but also in the mode of collecting data, errors in inferences, are all abundant in their superficial study. Such reports do considerable harm to the community, and interfere with the earnest work and efforts of the majority of scientific investigators. Horsley and Sturge, in a recent very able contribution,* have shown the inexcusable inaccuracy of Elderton and Pearson, whom they qualify very justly not only as unscientific writers, but also as dangerous to the cause of eugenics, which every right-minded man has at heart.

It may be of interest to mention the results of experiments conducted on animals with reference to the question of germ-plasm deterioration, which is discussed here from a psychiatric standpoint. There is no doubt that ethyl alcohol taken into the organism in any form and allowed to act for some time can produce changes in the germ cells, which influence many generations of descendants. These changes are multiple, ranging from an ordinary nervous disturbance to an anomaly and deformity and to the production of fetuses which die *in utero*. These manifestations have been designated by Forel as *blastophthoria*, meaning "injury to the germ plasm."†

Heredity consists of the transmission of physical and mental characteristics of parents to the offspring by means of the energy of the nuclear plasm of the germ cells. After sexual union has taken place, a combination of the hereditary characteristics of both cells follows. Should any change occur in the qualities of the plasm of the germ cells, a lasting alteration will develop in the hereditary energies of these cells. Alcohol is one of the agents capable of producing the blastophthoria of Forel or germ deterioration, which, in its turn, causes many anomalies and defects involving the embryonal development of various organs. Blastophthoria or germ deterioration can be perpetuated for many successive generations through habitual hereditary transmission.

* British Med. Jour., Jan. 14, 1911.

† "Hygiene der Nerven und des Geistes," 1903.

A STUDY OF THE DEFECTS OF MEMORY IN INEBRIATES.

By Rev. Dr. George B. Cutten, Pres. of Arcadia University,
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Impairment of memory is one of the first symptoms of decay in the history of the inebriate. Sometimes it is only a symptom. In others it is a positive indication of degeneration. The alcoholic who is specifically poisoned from alcohol, and is suffering from a condition that may be more or less temporary, is different from the inebriate, who from inheritance and previous disease has become defective and degenerate and the use of alcohol is a very pleasing narcotic, covering up his symptoms.

The neurotic disease from heredity and other causes, combined with the toxemias from alcohol, is a very serious condition. Memory is not a faculty separate from the others, but is rather a manifestation of activity in certain directions, and therefore must suffer most seriously.

The inebriate and alcoholic are literally in stages of premature old age with degrees of senility. The term paralysis describes most accurately the real conditions present.

Progressive amnesia is the rule in these persons, while hyperamnesia is very often associated with it. Sometimes the person has a very acute realization of certain events, which may be unreal in part, and all the rest is a blank. At other times the recollection of what was said and the appearance of his associates may be very acute, while his own conduct and talk is a blank.

A great variety of abnormality is manifest in the memory, sometimes fleeting, at others continuous. The theory that best explains this is that the dendrites and collaterals which form connection with each other become widely separated, or if they come together for a few moments, the connection is transient. The nerve currents pass from one terminal to another, are interfered with and the connection is broken up. It is a well established fact that alcohol does this both temporarily and after a time produces permanent changes.

The dendrites are shrunken and incapable of carrying the nerve currents, hence the stimuli along the nerve from one process to another is cut off. Nutritive changes are also important. Where the nerve cell is imperfectly nourished, or poisoned by substances coming from without, there is diminished activity, and later softening and distinct breaking down. These and other conditions are no doubt present in defects of memory. Memory depends very largely on the

senses. Where these are normal and clear, the impressions would naturally be correct. Where these are blurred and defective, the same condition would be found in the memory. The capacity to determine the value of sense impressions is another factor. If this is impaired and disturbed the proper images could not be fixed on the mind.

When the cells are fatigued both of the muscles and nerves, the impressions will be imperfect. Now nervous energy, or exaggerated nervous energy will be registered in the memory.

The normal flow of blood to the brain, if greatly exaggerated or diminished is followed by pronounced effects. If the blood is driven in spasms with great intensity, or if the blood contains toxins, if the plasma is diminished in nutrient value, these all have a marked influence. The alcoholic, who is alternately suffering from spasmodic irritations, the result of blood currents driven in high speed for a little time and then slowed down, has a condition of fatigue, both physical and psychical, that the memory will register in some way. There is a distinct basis of memory in nutrition and many other very pronounced modifications of the movement of the blood currents. This is evident in all conditions of life. The memory at the close of a day is weak and feeble. In the morning after a long rest it is clear and refreshed.

Memory, following illness, shocks, hemorrhages, poisons from mercury, lead and tobacco, show wide variations, as well as conclusive proof of its dependence on physical conditions. Memory may be called a process of organization particularly of dynamic association and the various elements of the brain which respond to appropriate stimuli.

Amnesia is a process of disorganization, and dissolution, in which impressions are confused or blotted out altogether. There are many theories offered to explain this, particularly theories that refer to localized destruction of cells and fibrins and congestion, failures of certain neurons to functionate properly. Exaggerated nerve impulses along centers that destroy the harmonious workings and leave local defects, which may be registered in the loss of memory are common.

There are several conditions which obtain and are prominent. One loss of memory as a retentative impulse, that is, ability to recall events that have happened, also as faces and names he has seen and heard. The other may be called the reproductive failure, in which recollections of a series of events and mental impressions following from them can not be recalled.

This refers back to the will and ability to order conduct from the

reproduction of the history of events in the past. There seems to be no guiding impulse. Experience is lost and reason cannot recall what was done and how it was done. The man intoxicated who is particularly violent has no registration of these occurrences from which to judge the future, hence he repeats the act without the slightest restraint from a knowledge of the past. This no doubt explains the recurrence of the drink paroxysm over and over again, with the same experience and under the same conditions. His memory has lost all power of recalling events, and each drink paroxysm is a new one to his bewildered brain, governed entirely by the impulses of the moment. If told of his abnormal conduct while in this state, he doubts it, thinks it impossible, and the statements of his friends exaggerated. When crime is committed the struggle of how to explain it is often pitiful.

In other instances the memory is paramnesiac, exaggerated in certain particulars and defective in others. He will recall with great vividness some particular act or event during the drink period and usually this will be distorted, unreal and disconnected with that which preceded and followed after.

The statement that his memory was clear and that he knew exactly what he was doing from the time of taking the first glass of spirits, until he was put to bed in a stupid condition, is always delusional and imperfect.

Memory, like other faculties of the body, cannot retain its normal power of registry after the continuous irritation and depression from the continuous use of spirits. In many instances there are blanks or distinct periods in which no event was registered by memory. This is confirmed by experience among persons who are not using spirits. Sir Henry Holland, after a long walk and excessive fatigue could not remember a word of the German language, and only after sleep and rest did this come back to him.

Reporters who desire to recall minute events find from experience that they must avoid fatigue, over-strain and over-eating. Charles Dickens records the fact, that in the early days when describing any event he was very careful to avoid every possible strain and drain, never eating until after the work was done. The reproduc-

tive power of the memory was brought out here. A hotel clerk whose memory of names and faces is phenomenal, insists that his work should be confined to the forenoon, as late in the afternoon and even a very clear, connected account of what was a blank before.

Some very curious instances have been noted by Dr. Crothers of persons who were unable to explain or recall events which they witnessed. After a Turkish bath and a few hours' rest, they could give a very clear connected account of what was a blank before.

A man under the influence of spirits witnessed a murder and for a long time was unable to give a connected account of it, but later, after treatment in a sanatorium, by baths and rest, recovered and described the events in some detail.

In this person the drinking was very recent and the defects of the brain were of a temporary character.

It may be safely said that an alcoholic with an inebriate basis or heredity has a diseased memory, and that his recollection and statement of events is of no value, unless confirmed by other evidence. Such a person, of necessity must have impaired sensory functional activities, and naturally be abnormal and untrustworthy.

The faults of memory in the alcoholic sometimes concentrate in certain directions. First he will be unable to recognize things that he has seen before, and second, he may be positive of experience which has not occurred. His relation to time and space may not be much impaired, but his conception of events, as going to a club house or saloon, playing cards, gambling, visiting a horse race, are all so hazy and confused as to be denied. In the place of this he may consider that he was in another part of the city, engaged in another work, or if employed in a mercantile business, will be sure that he was going on in the regular order.

In many persons the faults of memory are concealed and the patient after a time accepts the statements of others as to events he was concerned with, and believes them to be his own. Innumerable examples of this have been noted. Often police officers and others with a motive have told persons recovering from the drink craze that such and such things have happened, and in that way suggesting probable events that were foreign and unreal.

In many persons there is a high degree of suggestibility, particularly on recovering from the drink paroxysm. The memory is unable to reflect any events of the past and the mind become acutely active to replace the memory by accounts given by others.

Mistakes of orientation and localization are present, but these are readily corrected. A man in a hospital, after a drink attack will be unable to determine where he is, although he may have been there many times before. With the help of the nurse he may realize his condition, yet independent of outside sources, it would be a blank to him. A number of alcoholics are unable to understand the meaning of a passage in a book, or the counsel of friends, or the necessity for certain acts. They will acquiesce for the time being and in a short time be unconscious of what they said or did. Hence the promises of a person who has drunk are uncertain, and can be fixed in the mind or memory for only a brief time.

This is a form of memory defect, very common to alcoholics, the significance of which does not mean that the person is not anxious to do what he is told, but there is fatigue of memory to such an extent that events cannot be recalled and promises are forgotten.

The explanations of why the patient did not do this or that borders on the absurd. Studies have been made to know if there is any particular order of degeneration in the memory of alcoholics. The results have not been satisfactory, but it would seem that events of recent origin are the first that become hazy and disappear, while those that have occurred some time ago, remain clear. Thus the person may remember events very clearly up to a certain point of time. This may be when he begins to use spirits, or the conditions which lead up to it. A prominent example was that of a man who had not drunk for several years, who recalls with great distinctness the crushing of the end of a car in which he was riding. From that on, everything was a blank. He was taken off from the car with but little injury, went to a neighboring saloon, drank to great excess and continued until he became very ill, was taken to a hospital, then recovered. All this interval was a blank.

It would appear that names and dates and promises or duties, are the first to vanish in the order of amnesia. Then later knowledge of

events, reasonings, sentiments, affections and finally rules of conduct. This seems to follow the common history of senile dementia. In the inebriate, this progressive change will be marked, although there may be halts and apparent recoveries, but full restoration is extremely doubtful. Persons who have suffered from alcoholism and recovered, show evidence of the faults of memory by their constant noting events on paper when they occur.

This enables them to correct the defects which have come from spirits. In one instance a man, carrying a heavy load of business was very particular to record every obligation and duty. In social matters he did not show this anxiety. Another instance is of a man who recorded with great care every place he went and the length of time he stayed. Another recorded his expenditures with great minuteness. The list might go on, almost indefinitely, showing particular faults and diseases of memory. The question of morals is very closely associated with memory and the same degenerations are frequently noted in the ethical realm of consciousness of right and wrong.

How far memory is distinct and precedes this is a very interesting question. How far memory is ever restored is another question about which a great many very interesting facts have been gathered. In the inebriate it is almost impossible to expect restoration of this faculty, although great improvement has been noted.

The use of spirits for any length of time, either in so-called moderation or excess, so far impairs the whole nervous system, both physically and psychically, that it will be difficult to expect a return to a normal condition.

The power of abstract reasoning, judgment—in fact, all the faculties, are seriously affected. The phenomena of multiple personality sometimes noted in persons under the influence of spirits, who are able to locate and to recall certain events, which when sober are a blank to them, is unknown.

The same thing occurs in persons under the influence of hypnotism, meaning the dominance of a special idea to show some acuteness of memory not evident at othertimes. Some literature has been gathered concerning the influence of diseased memory on morals, particularly in alcoholics. The untruthfulness of persons under the influence of spirits is very frequently traceable to their faulty memories,

and this is true in chronic cases. There are many remarkable facts along this line which are not well studied.

A number of cases have been noted in which alcohol seems to intensify the memory, making conduct and events more vivid, and yet the reality of this is distorted, as subsequent study shows. The person who claims exact knowledge of the motives and reasons that actuated him from the time of the first glass of spirits, and attempts to write them down, fails.

The relation between the events becomes distorted, exaggerated, and his reasoning also disturbed, and the normal balance between events and their purpose and meaning will not bear critical study. In this there is paramnesia, exaggerated registration, and the statements of the patient are open to many errors.

Occasionally a person can be studied and his own statements and those of persons who are associated with him compared, but always to the detriment of the accuracy of his memory. In all probability the same physiological condition occurs, noted in the effects of alcohol on organic activities, namely, a sudden exaltation and increased activity, followed by diminished and perverted conditions that become anaesthetic. The anaesthesia may begin at once, or it may follow after several glasses of spirits have been taken, but it is certain to appear.

Of one fact there can be no question: that the memory is incapable of noting the fine shades and distinctions which govern human actions and conduct. Like the senses, it is impaired and feeble, and fails to functionate properly. Probably no process of organization of external impressions and registration of them is more positively damaged than that of memory. Hence a study of memory is, in a general way, a very good index of the degenerations present.

In senile dementia the memory is so far impaired as to make the person a mere automaton. It is asserted that all alcoholics with inebriate basis are dements sooner or later. This is true in a certain degree. The oft-repeated statements that alcohol has not impaired the mind or memory cannot be verified by careful study, although superficially they may appear to be correct.

This subject is discussed at some length in the author's book on "The Psychology of Alcoholism," published by Scribner & Sons.

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Abstracts

ALCOHOL AND THE DIGESTIVE ORGANS.

By A. B. Olsen, M.D., D.P.H., Cutterham Valley, England.

The following very interesting account of the action of alcohol, written in a popular style by a famous author, deserves a notice:

The habitual use of alcohol, whether in moderate or immoderate quantities, produces both functional and organic disturbances throughout the body, and these ulterior effects are no less marked or disastrous in the alimentary canal and in the liver than elsewhere.

AN IRRITATING POISON.

Wherever alcohol comes in contact with the mucous membrane of the digestive tract it produces local congestions, which are manifested by reddened areas. To protect from the destructive influence of the alcohol, the mucous glands secrete and discharge an increased amount of mucous, which forms a sort of covering coat. The constant irritation finally sets up a catarrhal process, which seriously interferes with the normal secretions of the natural juices of the stomach, and both retards and lessens the digestive functions. This effect, like many other harmful influences of alcohol, is insidious, and often times the victim has developed a chronic form of stomach catarrh before realizing the condition. This same distressing effect is seen wherever alcohol comes in contact with the delicate lining membranes of either stomach or bowel, for the general effects of alcohol are distinctly those of a local irritant.

ORGANIC CHANGES.

Besides these functional disorders which alcohol produces, other more serious and permanent tissue changes take place. There are at least three distinct organic changes following the use of alcohol, viz.:

Fatty degeneration; atrophy or shrinkage of the tissues; fibrosis or fibrous thickening and hardening of the organ.

According to Dr. Harry Campbell, F.R.C.P., "These changes, as might be expected, are generally most pronounced in the alimentary tract and in the liver, but no tissue is exempt from them." Only one interpretation can be placed on these fundamental and grave changes which take place in the structural substances of the body, and that is they lay the foundation for permanent organic disease, which is never entirely curable.

This is the real nature of the chronic gastric catarrh from which the drunkard is liable to suffer. The stomach wall itself has become permanently diseased, and a varying portion of its glandular organs have been destroyed. Sometimes ulcers form in the wall of the stomach and give rise to much pain and distress. Later, cancer may develop in the site of one of these chronic ulcers, or rather in the scar that is left behind.

WEAKENING OF DIGESTION.

The net result in any case is a distinct weakening of the normal powers of digestion. The presence of alcohol, even in a small quantity, interferes with and retards the action of the pepsin in the digestion of food. The same is true of salivary digestion, which normally takes place in the stomach if the food is well masticated. Furthermore, the natural churning movements of the stomach are diminished, for one of the striking effects of alcohol is to lessen muscular tone and produce what is known as an atonic condition or atony of the stomach. Now tone means strength, and the loss of muscular tone simply means the loss of muscular strength of the stomach, and therewith loss of digestive power. The food remains longer in the stomach on account of the weakened condition of its wall dilation, and also prolapse of the organ takes place, and various dyspeptic symptoms arise in the course of time; but the poor victim of this unconscious abuse generally regards this dyspepsia as an indication of the need of more alcohol, and as his appetite for the drink rarely fails, his natural course is to increase the quantity of intoxicating beverages, and thus magnify the gastric disturbances.

THE BENUMBING INFLUENCE OF ALCOHOL.

But for a time the imbiber of alcohol finds relief because of the anaesthizing powers of the poison. Alcohol not only acts as a local

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The s are also w local irrita and there atony whi the bowels nation, is of alcohol hol is pro disorders a chronic; ar bowel near cancer.

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irritant but also is a local anaesthetic, for it benumbs the nerves and dulls sensibility. This is an action of the drug which has long been recognized, and before the days of ether and chloroform alcohol was very largely and freely used for this very purpose. Even today alcohol is used in what is called the A. C. E. mixture, which consists of equal parts of alcohol, chloroform and ether. Each time alcohol is taken there is a temporary sense of exhilaration and well-being, and the numerous discomforts and unpleasant disturbances produced by the action of the poison upon the body are for the time diminished or removed, but soon the effect wears off and more drink is wanted to continue the relief.

ALCOHOL AND THE INTESTINES.

The same general effects which alcohol produces in the stomach are also witnessed in both the small and large bowel. There are the local irritating effects which interfere with the digestive processes, and there is also the weakening of muscle action, and the consequent atony which it produced. Peristalsis, or the muscular movement of the bowels, which is so essential to good digestion and perfect elimination, is seriously disturbed on account of the weakening influence of alcohol upon the muscular structures. The moderate user of alcohol is prone to constipation as well as dyspepsia, and piles and other disorders are liable to result. Intestinal catarrh develops and becomes chronic; and duodenal ulcers, that is, ulcers in the first part of the small bowel near the stomach are liable to develop, and eventually, possibly cancer.

ALCOHOL AND THE LIVER.

No digestive organ suffers more than the liver from the pernicious effects of alcoholic drinks. The first step is one of congestion as a result of the irritation which is set up. The congestion of the liver is followed by atrophy, or shrinkage, and more or less fatty degeneration. Perhaps the most striking change is the marked increase in the fibrous tissue which constitutes the supporting frame-work of the organ. Normally there is just sufficient fibrous tissue to hold the organ together properly and maintain its natural form. The abnormal increase of this supporting tissue takes place at the expense of the glandular or working portion of the liver, and the direct result is that

the service of the liver is steadily and gradually interfered with and reduced. Ultimately the organ becomes much shrunken in size and often presents an irregular, nodular surface, which has led to the name "hob-nailed liver," or "gin liver." In this later stage the liver slowly and permanently loses its functions and finally becomes practically a useless organ. The use of alcoholic beverages also leads to formation of abscesses in the liver, and on account of its irritating effects, may finally produce some malignant disease, such as cancer.

DISARMING OF THE BODY.

In conclusion, we may point out that alcohol, as far as the digestive organs are concerned, not only interferes with their normal digestive functions, but also destroys their natural powers of protecting the body from disease. A person who is suffering from alcoholic dissipation, mild or severe, is less able to destroy the microbes of disease which may be taken in with the food, and is therefore far more susceptible to typhoid fever, cholera, and similar diseases. The vital resistance to both heat and cold is also diminished, as well as resistance to infection, and the body is thus disarmed to a large extent of its natural resistive and fighting forces, and thus becomes a more easy prey to sickness, disease and death.

CAFFEIN AND ALCOHOL.

The following conclusions from a study by Drs. Pilcher and Sollman on Alcohol and Caffein, found in *The Journal of Pharmacology*, are interesting and in some measure confirm the theories and studies of others:

The fact that alcohol and caffein are supposed to be antagonistic and are used as antidotes, one for the other, led the authors to undertake a series of experiments on animals, with each drug by itself and with the combined drugs.

They found that alcohol produces narcosis, or coma, or even death, according to the size of the dose. It produces motor depression increasing with the dose, and complete inco-ordination or ataxia.

Caffein, in non-fatal doses, causes only wakefulness and increased irritability. In fatal cases, from caffein poisoning, there are varying

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degrees of excitement, followed by convulsions, the reflex irritability being increased in varying degrees according to the doses.

It was observed that alcohol and caffeine combined do not reduce the toxicity of each other in any dose. On the contrary, death occurs with less than one-half the fatal dose of each when given together; or, when the sum of the percentage fatality is only 143-10 per cent., the combined fatality is 100 per cent. It was further noted that alcohol narcosis delays death by caffeine, but the absolute fatality of caffeine is increased by alcohol.

The practical deductions may be summarized as follows:

1. *Caffein in Alcohol Poisoning.*—With fatal doses of alcohol, caffeine acts only deleteriously; with half fatal doses, moderate doses of caffeine may decrease the narcosis and hasten recovery, but large doses are dangerous.

2. *Alcohol and Caffein Poisoning.*—With small doses of caffeine, alcohol lessens the psychic effects; with large doses, alcohol adds to the danger.

....c. *Caffein.*—The danger of cardiac death is increased by agents which alone have relatively little direct depressent effect on the heart. This would engender caution in the use of caffeine in heart disease.

STUDIES OF THE ACTION OF ALCOHOL ON THE NERVES.

The Alliance News publishes some extracts from the Journal of the Railway Temperance Union that have much interest. The common theory that a small quantity of alcohol at the right time and place and in moderation is really helpful and serves to bring out some latent power of the body is not sustained by the following experiments:

The late Dr. Ridge made some experiments at a hospital on a group of ten people, comprising medical students, porters, and nurses. He put up at the end of a corridor a row of letters, and got each member of the group to walk slowly from the other end until the letters could be read, of course changing the order of the letters in each case. A mark was made on the floor to show the spot where the reading was done, and the person's initials placed beside it. Then he supplied them with beer in quantities ranging from half-a-pint to as little as

one-sixteenth of a pint. "Moderate" enough in all conscience. On repeating the test, not one of the group could now read the letters at the spot where they formerly stood; all had to go nearer. In no case was there an improvement. If so small an amount is sufficient to affect the nerves of sight, one cannot help wondering how many poor fellows on the line have lost life or limb through their own or fellow-worker's mistaken idea that "a little does you good." Prof. Kraepelin, of Heidelberg University, in the course of his famous experiments discovered that on an average a man who had taken a fluid ounce of alcohol (equal to one pint of beer) had half an hour afterward to go to a distance of 20 feet to read letters that he had previously read at 30 feet. He also records that the effect on the nerves of a quarter-pint or half-pint of beer lasted from four to five hours after drinking, so that a man who takes a half-pint just before going on duty renders his eyes less keen for signals for the next four or five hours.

Prof. Kraepelin made his long series of experiments with the idea of proving that a moderate dose of alcohol helped a man to do better work, so his testimony is all the more remarkable when he records the fact that he proved just the opposite. One of his experiments was as follows: He put a man at some distance from a screen, from behind which a colored flag was suddenly erected. The raising of the flag started a stop-watch, and the man had to press a button which, by means of electricity, stopped the watch, and so recorded how long he took to perceive the flag, decide its color, and press the right button for that color. He then was allowed a glass of wine, which might be considered equal to a half-pint of beer, and a short time afterward the experiment was repeated, with the result that in every one of the many cases tested the man was slower after taking alcohol than before it. Readers of "On the Line" will be able to point the moral themselves.

Here is an experiment for the clerical staff: Prof. Kraepelin set a dozen clerks to work a number of compound addition sums. Each man had a stop-watch, which he started when he began work and stopped when he had finished, thus recording the time taken. Then he was allowed the assistance (?) of a glass of wine, and started to work an equal number of similar sums. Out of the first dozen tried, eleven were slower than before, and the other man, though slightly

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faster, got all his sums wrong. The experiment was repeated again and again, with different sets of clerks, but the results were invariably against the use of alcohol. The remarkable feature of it all was that every clerk was certain he was working faster after the wine than before, and was astounded to find that the watch was against him. So impressed was the professor that he tried the experiment on himself, and suffered the same deception as to doing better and faster work after taking alcohol than before. This explains why many people persist in drinking liquor to help them in their work. They genuinely think it helps them; they "are deceived thereby and not wise."

ALCOHOL, CAFFEIN AND TOBACCO.

In a special article on toxic disturbances, appearing in the *Journal of the A. M. A.*, without the signature of the author, some very interesting facts are presented on the subject of alcohol. The author is evidently not familiar with modern investigations, but reflects very clearly the sentiment which greets every new truth, particularly when it antagonizes previous conceptions.

"Thus alcohol has some food value when taken in very small quantities and taken under special circumstances; Alcohol is a stimulant and does good in many cases." Then follows a long arraignment of the bad effects from alcohol.

The author evidently assumes that there are dividing lines between the good and bad effects from spirits, also that it is possible to determine where these boundary lines are, and uses these facts therapeutically. On the subject of caffein the author has some more accurate data and conclusions that are not well known.

He mentions the fact that many cases of tachycardia and obscure symptoms of deranged nerve and blood circulation disappear when coffee is given up. "Caffein is a stimulant and tonic and is one of the most active of this class of drugs. It increases blood pressure and acts as a diuretic by increasing the circulatory force of the blood."

"This action on the kidneys often counterindicates the use of caffein. Where there is nephritis and hypertension, it should not be used, even in the form of coffee. It first accelerates the heart, then diminishes its action, and often strengthens it. If the dose is large

and frequently repeated, there is interference with the contraction of the ventricles. The heart muscles become irritable. When the heart has any serious lesion, the action of caffeine is contraindicated. The fact that it raises the blood pressure, thus increasing the force against which the heart must act, shows that it is a dangerous drug.

"All nervous, irritable hearts are made worse by the tea, coffee, and caffeine. Persons who are nervously irritable, excited and over-stimulated should avoid tea and coffee. This is particularly true in childhood and youth, and becomes more and more evident as age advances in most persons." The author thinks it is a crime to sell caffeine at a soda fountain as a beverage to children. The over-stimulation that comes from it is positively injurious.

"Many persons discover in middle life that they cannot drink coffee, because it produces insomnia. A majority of persons feel that they are no worse for a morning cup of coffee and a cup of tea at night. Whether they suffer or not from the continual increase of blood pressure, even in small quantities, is an open question. The modern custom of a five o'clock tea is certainly dangerous by adding a nervous excitant, which in the end will certainly appear in some form of neuroses."

On the subject of tobacco, the author affirms that the injurious effects are evident to every clinician. "There are a large number of persons who are actually poisoned by tobacco. Exactly what amount will produce effects varies largely, but boys and young persons are always damaged by smoking. It is a very significant fact that the increase of cigarettes is enormous: that in spite of the alarm, public-school instruction and anti-tobacco efforts, the consumption is increasing."

"Tobacco affects the circulation. At first the heart is weakened and the vaso-motor pressure is lowered to the extent of nausea and prostration. Later this effect is less acute, but in all cases the blood pressure is raised and the heart is slowed. The continued elevation of the heart's action and its depression is followed by feebleness of the heart muscles and dilation of the left ventricle. This is termed 'tobacco heart.'"

The action is so positive and so pronounced that no other explanation is possible. The active principle of tobacco is nicotine.

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There are also aromatic camphor-like substances, called cellulose resins and sugars. There is in the combustion carbon-monoxide gas and small amounts of prussic acid, and recently the aldehyde furfural, which is really one of the most poisonous of all the drugs.

"This latter substance has been found recently and its effects are very pronounced. These toxic substances may vary considerably, but in all cases they are present and constitute a serious danger. The soothing action of alcohol is due entirely to its narcotic effect. It raises the blood pressure and later lowers it. The person who is tired and irritable receives from cigarettes a sedative that covers up the weariness and cell fatigue, and the person who, after a hearty meal, suffers from depression and lassitude finds the increased heart's action and tension a relief.

"The local effect of tobacco on the throat is very marked. Inhaling produces a great variety of catarrhs and derangements which are local and frequently lead up to cancer or form centers for the growths. Cigarette smoking is the most harmful. There is probably some effect beyond that of the inflammatory conditions of the mouth and nose. There is absorption of the poisons, which act on cell and nerve tissues, and produce permanent derangement to protoplasmic growth. It can be said with certainty that the reserve energy of the heart is impaired, and when illness or sudden strain comes on, this danger appears very sharply.

"A species of circulatory failure is noted in convalescents from serious illness." The author is very minute in describing the possible ill effects from tobacco, but finally ends in a confused acknowledgment that tobacco may be of some value in saving persons from collapse, and that one or more cigars a day may not be injurious to certain persons. It would seem that the author himself must be a smoker, and to acknowledge the facts and conclusions from laboratory experiments as being beyond all question, would be to reflect on his personal opinion and conduct, hence he takes the middle ground and assumes that, while it is a very bad substance, it has some good qualities and might be of service to certain persons.

PSYCHOLOGICAL DEFECTS IN INEBRIATES.

Dr. Cooper, in a little book noticed in the Journal, has stated the following which is very interesting:

Dr. Cooper, in a little book noticed in this issue of the Journal, has stated the following, which is very interesting:

"The following are the principal psychophysical defects and peculiarities found to be present in greater or less degree in all alcoholic inebriates, and on them their inebriety would seem to depend:

"1. An incapacity to bear physical or mental pain or distress, or an abnormal degree or physical hyperaesthesia, or both. The consequence of such defect or peculiarity is an abnormal need of immediate, adequate and complete relief of such mental or physical pain or distress at any or all costs.

"2. Defective moral sense.

"3. Defective sense of responsibility.

"4. Intolerance or tolerance of alcohol, below or above normal respectively. The intolerance is seen in periodic and the tolerance in chronic inebriety.

"5. Defective realization and appreciation of his abnormalities on the part of the inebriate, even when sober, which are obvious to those about him, such defect being observable in a great many persons of unstable equilibrium, who are not insane, as well as in insane persons.

"6. Defective inhibition, making resistance to any real or fancied need, desire or impulse, abnormally difficult. Such inhibition shows itself in relation to most of the affairs of everyday life, and not by any means only in regard to alcohol custom or usage, though such custom long continued increases the defect.

"7. A generally defective mental equilibrium, showing itself principally perhaps in want of concentration and attention, abnormal emotionalism, unreasonable likes and dislikes, unreasonable and undue self-appreciation or self-depreciation, extremes of optimism and pessimism, cynicism and tedium vitae.

"These defects and peculiarities are present in greater or less degree in all pathological inebriates, though not always present in the same individual, and always in varying proportions.

"Perhaps the defect which varies most is the defect in the moral sense. It is nearly always present in some considerable degree, but may vary very greatly, and is one of the defects which is always made worse by continued alcoholic abuse, and which benefits very much under total abstinence and treatment generally.

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"We have now to consider what is the original of the defects and peculiarities, as such origin will also be predisposing causes of inebriety.

"There can be no doubt that these defects and peculiarities may be inherent or acquired, and it seems doubtful—very doubtful indeed—whether pathological inebriety can exist unless such defects and peculiarities inherent or acquired are present, and it is equally doubtful whether such peculiarities and defects, with the exception, perhaps, of tolerance of alcohol, can be acquired by careless and occasional drinking alone."

* * * * *

"Psychotherapy, and the psycho-analysis necessary to it, has revealed the fact that many obscure mental peculiarities owe their origin to some psychic traumatism, long forgotten by the patient, which has left a mark, the cause of which has never been recognized, and which, once recognized and properly treated, totally disappears.

"We are convinced that many cases of inebriety owe their origin to some unrecognized and long forgotten physical shock, as many undoubtedly are, due to more obvious ones. It is unnecessary to specify the numerous kinds of psychic shocks that may and do, result in habitual inebriety, of which business failure, especially when uninvited, sudden family bereavements, unsatisfactory love affairs, false accusations, etc., are perhaps the most common; comparatively trivial incidents, however, often occurring in quite early life, that would make no impression on a well-poised, sound, psychic constitution, may be the starting point in a predisposed person, of a train of psychic disturbances of which inebriety may be a symptom."

* * * * *

"Exciting causes, given and acquired or congenital mental instability, such as we have described, then any causes which conduce to the use of alcohol, will be causes of habitual periodic or chronic inebriety. The neurasthenic, psychasthenia mental unstable or actually insane person, who is exposed to the temptation to use alcohol, for any of the hundred and one conditions, for which it has become customary to use it, will, unless he has been successfully trained and taught to avoid it as a poison (and often in spite of such training), in the vast majority of cases, succumb to such a temptation, and if he does so succumb, inebriety will in a greater number of cases follow, in proportion to the degree of nervous, mental or psychic disturbances present. Such exciting causes are too numerous and varied to tabulate and will be evident to any thinking person, and will often be so

trivial as to be regarded as mere excuses; as indeed they would be if we disregarded the abnormal constitution of the patient.

"To all such mentally defective persons then, alcohol and other stimulant and narcotic drugs should be "taboo" and cannot be used in moderation without the gravest possible risk of the production of habitual periodic or chronic inebriety.

"Although the experiment cannot be regarded as a safe one, because of the possible existence of unrecognized mental defect, there can be no doubt whatever in my opinion, that the man who has taken alcohol regularly without apparent detriment, during a long life, has applied to himself, one of the most perfect tests of mental equilibrium, power of control over impulses and power of judgment, it is possible to apply. The daily life of most people, nowadays, calls forth all our energies, whether we live for work or for pleasure. The tendency is to overdraw on our health account. We get frequent warnings of such overdraws, which we either in most cases, disregard, or call forth extra efforts of latent energies to combat, by the use of stimulants or narcotics or both. The result is a nervous bankruptcy, one of the results of which again is inebriety."

STATEMENTS OF GREAT BRITAIN PHYSICIANS AGAINST ALCOHOL.

Two years ago, fifty physicians, members of the British Medical Association were asked to address the people of Birmingham, England, concerning the question of alcohol. Each one was free to express any opinion he chose, hence it was a valuable symposium of physicians, most of them leading men in Great Britain.

The following is a compilation of the leading thought expressed in these fifty addresses, and is particularly valuable as a condensed statement, of what is recognized, and supported by the very best evidence up to the present day.

A volume of these addresses can be had by addressing R. J. James, 13 Ivy Lane, Paternoster Row, London, England.

That Alcohol does not quench but awakens thirst.

That Alcohol is of no value when work is to be done.

That Alcohol diminishes the quality and total output of manual work of all kinds.

That Alcohol causes great deterioration of the quality of intellectual work.

That Alcohol blunts perception and feeling, impairs moral sense and impedes intellectual processes.

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That Alcohol, when taken by children, checks growth, and development, both mentally and bodily.

That Alcohol weakens the power of self-control, thus leading to immorality and crime, poverty and misery.

That Alcohol has a narcotic poisonous action and must be classed with chloroform and ether.

That Alcohol predisposes both directly and indirectly to infectious fevers.

That Alcohol is now known to be one of the most important factors in rendering patients more susceptible to the attacks of the tubercule bacillus and so to tuberculosis.

That in pneumonia and typhoid fever Alcohol does more harm than good.

That Alcohol hastens the end in a fatal illness, but prolongs the duration of the illness in those cases in which the patient recovers.

That Alcohol predisposes to heat-stroke in hot weather.

That Alcohol causes rapid loss of heat in cold weather.

That Alcohol causes degeneration of the heart and blood-vessels.

That Alcohol is one of the great pre-disposing causes of heart-failure and cerebral hemorrhage.

That Alcohol often causes neuritis or inflammation of the nerves.

That Alcohol is one of the great causes of degeneration or too rapid aging of the tissues of the body.

That those who take no Alcohol can perform more work, possess greater powers of endurance, have less sickness, and recover more quickly than non-abstainers, whist they are unaffected by any of those diseases specially caused by Alcohol.

That the great amount of drinking of Alcoholic liquors among the working classes is one of the greatest evils of the day, destroying more than anything else, the health, happiness, and welfare of those classes.

That the universal abstinence from alcoholic liquors as beverages would contribute greatly to the health, prosperity, morality and happiness of the human race.

That the general adoption of abstinence from all intoxicating beverages is the most natural, sures, simplest, and quickest method of removing the evils which result from their use, and as the first great step towards the solution of many of the most difficult social problems by which we are confronted.

RACE BETTERMENT.

Prof. Vaughan, Pres. of the Michigan State Board of Health and Dean of the Michigan University, in a recent lecture to the students

on this subject, has grouped a mass of facts in a popular way most interesting. This is published by the Department of State and distributed as a health tract which is certainly one of the most effective ways of reaching the public mind, and clearing away the obscurity and ignorance on topics that should be known.

On the question of heredity occurs the following, "All agree that certain forms of insanity are transmissible and that certain children from defective parenthood are certain to develop grave degenerative diseases.

Insanity due to alcohol, syphilis and other poisons, certainly appears in the next generation in some form or another. Whether it is due to inherited weakness, or acquired depravity, is still an open question.

There are families of drunkards in which alcoholism is more common than in others, and characterized by mental defects, thus feeble-minded, epilepsy, insanity, sexual obliquity, criminality and alcoholism, are found in the same genealogical tree and seem to thrive under the same conditions.

There is much evidence to support the claim that alcoholism, engrafted on good stock, leads to deterioration, while on bad stock, it increases the defect. We see a constant excess, beyond expectation of epileptic and feeble-minded offspring from alcoholic parents.

Studies show that alcoholism to a certain extent is a positive cause of defects, and that from ten to twenty per cent. more children are defective than there would be, if it were not for alcohol. Where the parents are feeble-minded, the alcoholism breaks out with renewed violence and in many different forms.

We have in our population the greatest proportion of criminals of any civilized country. It is said that 250,000 persons a year follow the trade of crime and are never touched by the law. Ten thousand persons are murdered in this country every year, and only two per cent. of the murderers are punished. These are conditions that should be recognized and prevented by the removal of causes. Lectures of this class coming with authority are of immense value to build up public sentiment and we commend them most heartily.

The Cosmopolitan Magazine for March contains an article with this significant heading, *What is the Matter with Your Brain?* The author indicates that the hygiene of the brain is of equal importance to hygiene of the body, but this at present is greatly neglected. After mentioning the weakness that follows from untrained brains, he says, "More than likely you supplant these sins of commission with habits

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that directly tend to vitiate the power, or the quality of your mental actions. You smoke far more than is good for your mind and body, charging your system with the nerve-poison nicotine; or you steadily impair your brain power and subject yourself to the dangers of permanent mental deterioration by habitually taking alcoholic beverages. You know, probably, that tobacco is injurious to you; yet you cannot forego the gratification of your senses, even for the sake of clearness of mind. You have probably been told that scientific tests have proven that alcohol in small quantities definitely and measurably decreases the amount and quality of mental action. Your observation has taught you that a drink of spirits flushes your face and exhilarates your mind. You correctly infer that the brain is similarly flushed, and that the abnormal activity excited must result in quick reaction. Thousands of observations prove that such excitation, due to alcohol, if persistently repeated, may result in hardening of the arteries, with liability to rupture or the formation of clots, to be followed by the degeneration of the brain tissues. Yet you prefer to take this chance, rather than deny yourself the transient and illusory sense of well being, that a drink of liquor gives you. If you chance to inherit some measure of neurotic taint, and few families are totally free from it, or if you are subjected to some undue strain from business worries or an acute illness, the incipient weakening of your brain tissues from the habitual use of alcohol—even in small quantities—will supply precisely the conditions best suited to put you in danger of complete mental breakdown.

Such, indeed, is the history of at least one in four among all the unfortunates who suffer mental overthrow and are taken to hospitals for the insane. But even short of this, there is persistent lessening of your mental efficiency which must enter largely into the question of your success or failure in your life work. Of course you feel very confident that however much your brain may lack of full efficiency of action, there is no probability that it will altogether fail you.

You may be right; yet it is worth your while to recall that there are two hundred thousand individuals confined in institutions for the insane, in the United States today, who a few years ago felt about themselves precisely as you feel about yourself now. Certainly 50,000, perhaps 75,000, of these unfortunates owe their mental illness, wholly or in part, to habits of alcoholic indulgence that at one time were doubtless thought by them to be as harmless as your use of alcohol in moderation seems to you now.

The question is exciting solicitude and becoming more and more alarming every day, and the tax-payer cannot overlook the fact that the monetary cost of the care of such insane, added to the loss through their removal from the ranks of productive workers, has been computed at not less than \$164,000.00 annually, a sum greater than the value of all our annual exports of agricultural products.

Notes

ALCOHOL IN THE CEREBRAL SPINAL FLUID OF INEBRIATES.

Two German investigators have recently given an account of some work in this direction, which has been published in (*Neurolog. Centrabl.*). They have found the toxin of tetanus, also acetone and aceto-acetic acid in diabetes, in the spinal fluid of persons suffering from these diseases. Following up this suggestion, they sought to determine whether the spinal fluid in alcoholics contained alcohol.

It is known that few substances pass from the blood to the cerebral spinal fluid. It has been surmised that alcohol having a definite affinity with cerebral substances would naturally be found in quantities in the cord. They found that the pressure of the fluid in the cord was increased and that they were able to take out large quantities of fluid, particularly in alcoholics.

This fluid was found to be unchanged in many ways. It was found that after removal of the fluids, or some quantity of it, the patient became more quiet and the headaches which preceded this condition disappeared. The removal of the fluid was replaced by sterile saline solution.

Ten cases were investigated. The results were that alcohol was found in all of them. In some instances, it was aldehyde, an oxidation product from alcohol. In eight of the ten cases alcohol was present in considerable amount. In two, the symptoms were negative, but not sufficiently pronounced to make it sure that no alcoholic product was present.

Several of the cases showed the presence of alcohol, four and five days after its use had been discontinued, showing that elimination was a very slow process. The authors did not go into the history of the cases to determine the amount of alcohol taken by the persons experimented on. They make the suggestion that possibly persons suffering from delirium tremens might show a high blood pressure in the cord and a large quantity of alcohol and its products present.

HISTORIC FACTS OF THE OPIUM TRAFFIC.

Dr. Crafts of Washington, D. C., has grouped a chronological history of the opium problem which is very valuable, and at the pres-

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ent time when there is so much interest centering about the growth of the poppy and its commercial relations to the world, this will be exceedingly interesting.

In 1834 China, who had for several years back tried to carry out prohibition of the introduction of the opium traffic, protested against the East India Company, which had been constantly smuggling opium into China.

This protest brought on some bitterness, but nothing practically came out of it. Six years later, in 1840, the Emperor of China refused positively to receive any revenue from the opium sale, and determined to stop the smuggling which became very open at that time.

He seized a number of vessels, scuttled them in the bay, and let water pass through them, causing a total loss of the opium which was valued at \$9,000,000. The next year a war was declared between China and England, and as a result, the Chinese paid over \$11,000,000 and opened five ports of commerce free to the world. The smuggling was not altogether suppressed.

In 1858 the efforts of the East India Company to promote the sale of opium, legally and illegally in China, brought on a second war is 1858, which was of short duration. In 1860 and '61 another war sprung up with the same points at issue. The English Government supported the East India Company and their efforts to keep up trade in the opium. but the Chinese objected and tried in every way to suppress it.

There was so much injustice in the whole affair that a Society was organized in Great Britain to check the opium traffic and to recognize the protests of the Chinese Government against buying it.

Finally in 1891 the British Parliament resolved that "the Indio-Chinese Opium trade is morally indefensible," but made no effort to suppress it. The Chinese Government struggled to suppress the growth of poppies in their country and this gave new impetus to the smugglers.

In 1893 the Philippine Government took up the question of driving out the demand for opium, and tried to suppress the traffic. Two years later Congress passed an enactment suppressing the traffic in that country. The next year, the English Government took up the subject and a strong anti-opium crusade sought to pass parliamentary laws forbidding the introduction of opium into China and assisting the Chinese Government to total prohibition.

This effort lingered along. Finally in 1909 an International Opium Commission assembled at Shanghai and the whole question

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was discussed by other nations, the English nation alone, being opposed.

The next year petitions coming from all over the world were sent to the English Government and they were obliged to recede from their former position. In 1911 the whole matter was submitted to a Commission which met at The Hague. The result was that the amount of opium permitted to be sent to China was limited, and the Chinese enactment of total prohibition both in the culture and sale, after 1918 was agreed to.

All importations beyond a certain amount was forbidden. In the meantime the Chinese Government passed very radical laws suppressing the growth and culture of poppies and punishing the violators with death.

This has gone on more or less successfully. The smugglers find it more difficult and dangerous to introduce opium. The latter part of the year some English speculators secreted a very large stock of opium at Shanghai. This was confiscated and burned and the English Government demanded indemnity. This was refused, and gunboats were ordered to enforce it. This has opened a new phase of the question.

The Chinese Government appealed to the other nations and the matter will come up at The Hague during the coming summer. Great interest will concentrate on its issue. The efforts of the Chinese Government to stop the opium traffic is felt severely in India. The suppression of the poppy growth in China creates a demand for the drug from outside sources, and brings to the front an Opium Trust which is trying to compel the Government of China to re-open the traffic.

MENTAL AND PHYSICAL EFFECTS OF INTOXICANTS AND NARCOTICS.

Recent biology has thrown some light at least upon the general relation of alcohol to animal life. Ethyl alcohol, the basis of all alcoholic intoxicants, is the product of the yeast plant acting in a saccharine substance. The yeast plant belongs to the lowest sub-kingdom of plant life, and is classified as a fungus. It has neither root, stem, nor leaf, and contains no chlorophyll. It is unable therefore, to subsist upon simple, inert compounds like other plants; and so like animals, it depends upon organisms containing chlorophyll for its food. Its energy is obtained through a decomposition process and in this process dextrose is broken up into ethyl alcohol and carbon dioxide. These products are both excretions, for the yeast plant makes no use of them. The law seems to be fully established

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that all excretions are toxic or poisonous to the organisms that produce them, and to all other organisms higher in the scale. Ethyl alcohol, then, if this be true, is essentially a poison to animal life, but we still are ignorant of the obscure effects of excretions upon the tissues.—From Partridge's book on The Psychology of Intemperance.

COCAINOMANIA.

The New York Medical Journal comments editorially on Dr. Lauthaume's paper on this subject, published in the French Review of Therapeutics. It appears that an epidemic of this mania is prevalent in France, particularly in Paris, Lyon, and other towns. The drug is snuffed and taken through the nose in preference to any other way.

The nasal cavities show characteristic lesions, particularly necrosis of the ceptum due to denutrition caused by the constricting action of cocaine on the local arteries. It is found that a particular form of insanity follows, marked by delirium of persecution and phantoms of sight and hearing.

A significant symptom is tremor and parasthesis of the surface of the body, suggesting bugs and insects crawling about. In the treatment, it is necessary to send the patient to a hospital where the drug can be withdrawn at once without entailing collapse.

If the mania is a complex one, associated with morphine or spirits its many unusual symptoms will appear. Frequently cardiac, pulmonary and renal lesions, but the psychic phenomena is so marked that they are easily recognized.

If collapse should follow, caffeine and sparteine are valuable remedies. The patient should be very carefully watched, and after the first symptoms nutrition in small quantities at short intervals is very valuable.

Constructive metabolism by the mean of baths, exercise, massage, electricity and light, are the principal remedies. It has been suggested by American authors that this mania is increasing in this country, but so far there is no evidence of this, other than its complications with morphine and spirits. That the lower classes use this drug more frequently than any other is confirmed by many observations. It is also true that cocaine, while a very valuable local anesthetic, has not the same popularity in medicine and surgery, as formerly.

Undoubtedly it is a very dangerous drug, and its psychical impressions on the brain are to be considered.

STUDIES OF MEMORY.

Dr. Smith of Heidelberg has recently conducted some experiments which show how thoroughly alcohol disturbs the memory. A number of

persons were given three or four glasses of beer a day, and required to memorize certain sentences, and write them down on paper. Half a dozen experiments were made with each person. No sentence was longer than four lines. The person was given the sentence and told to go and write it out; in fifteen or twenty minutes another sentence was given and the process repeated. For twenty days these experiments were carried on. The same amount of beer was given daily. After the sixth day the errors and losses in memory increased, and on the twentieth day the losses amounted to 70 per cent.; that is, in 100 experiments, over 70 of them were errors and mistakes. The faults of memory steadily increased. The first day's experiments showed a small amount of error. Then there was a steady increase.

This experiment confirms Kraepelin's tests of remembering numbers and words. He found that without alcohol, 100 figures could be remembered after forty repetitions, an average of two and a half numbers to each repetition. With alcohol the same person could only remember sixty figures, after sixty repetitions, an average of one number for each repetition. This showed a diminution of normal memory to the extent of over forty per cent.

In every-day life, where accuracy of memory is called for, it is a common fact that the beer and spirit drinkers are the most unreliable. Events which the person had intense interest in, seemed not to make the impression on the brain, when under the influence of spirits, and only with difficulty can be recalled, and even when remembered, are distorted and inaccurate.

These experiments can be made in almost every circle of society, and they bring out several very astonishing facts, that the memory, of all the brain functions, suffers most pronouncedly.

PROVERBS CONCERNING ALCOHOL.

The British Medical Journal has published some very interesting proverbs on diet and alcohol. The latter subject has a personal interest to students, and shows in many respects how clearly the latest facts concerning alcohol were foreshadowed long ago. A record of some of these will be of interest.

In second Kings there is this: "And it came to pass, that they cried out and said, 'Oh! man of God, there is death in the pot!'" This has come to be recognized as death in drinking vessels, and the warning is supposed to have been given to persons who drank from pots, unknown substances that were dangerous.

Another proverb in French reads: "He that can master his thirst is master of his health."

A Scottish proverb declared: "He that drinks water clear instead of wine, will have long life and health."

Longfellow writes: "He who drinks beer, thinks beer. He who drinks wine, thinks wine."

In Leviticus the Lord spake unto Aaron saying, "Do not drink wine or strong drink, thou nor thy sons with thee, when ye go into the tabernacle of the congregation, lest ye die. It shall be a statute forever throughout all generations."

In Isaiah it is said: "Woe to the drunkards of Ephraim, whose glorious beauty is a fading flower, which are on the head of the fat valleys of them that are overcome with wine. They also who have erred through wine and through strong drink are out of the way. The priest and the prophet have erred through strong drink, they are swallowed up of wine, they are out of the way through strong drink. They err in vision, they stumble in judgment."

Irving repeats the proverb that "They who drink beer will think beer. Another maxim says, "Never have business after dinner, for after dinner and drinking, there is little thinking."

"Deep drinkers have ever shallow memories," is a proverb almost universal; also, "When the wine goes in the wit goes out." Pliny states that "Wisdom is always clouded by wine."

"Character and shame depart when wine comes in." Chaucer's tales have many references to the feebleness of the brain and intellectual powers when wine is used. Thus, "A lecherous thing is wine." "Loquacity and alcohol go together." "A man sober, keeps his mind. A man drunk neither keeps secrets nor fulfils promises."

An old Latin proverb: "More men die of drink than of thirst. More are drowned by the contents of a goblet than in the sea. Beer fills many a bottle, and bottles fill many a bier."

There are many proverbs which compare inebriety with insanity. Koke's proverb that "Nothing is more like a madman than a drunken person," is repeated by Cassio's statement, "Oh, God! that men should put an enemy in their mouths to steal away their brains." Carlyle calls it "Liquid Madness, sold at twopence a glass."

"A madman is aggravated by spirits, and spirits make a mad man."

"A wine bred child and a Latin bred woman seldom end well," comes from Herbert's proverbs.

There are many proverbs in Greek and Latin literature that distinctly call attention to heredity. The frequent sentence, "One drunkard begets another," and "Drunken parents are sure to have drunken children;" also "Drunken and riotous men and women have come from drunken parents." "Drinking water neither makes a man ill nor his wife a widow." "If you

would be healthy, happy and stout, use water within and water without." "Only fools and madmen drink wine." "Wine brings gout, rheumatism, and death." "Water brings long life and peace with happiness." "Often drunk and seldom sober, falls like the leaves in October."

Proverbs in favor of alcohol are also prominent. They are usually pitched on a lower key, and while occasionally used as an excuse, seem not to be very popular, nor to grow. Lean's collection of proverbs and Benham's book of quotations contain many general sayings and statements. Modern literature is full of these quotations. All have reference to the recognition of the danger from alcohol. Some of them outline the latest discoveries, such as anaesthesia and palsy from spirits.

FALLACIOUS NEWSPAPER ITEMS.

The following item was widely published and accepted as a fact, and quoted,

"Mr. John Blank died at Blank, 105 years old. He was in good health, had never been sick a day, up to the time of his death. From the time he was twenty years of age, he had drank spirits continuously, sometimes in great quantities, and smoked all his life. He had served in

the Mexican war, and in the Civil war with credit. He raised a large family, and was a reputable citizen. His drinking habits were attested by several generations of persons, and he was an example of the preservative effects of alcohol, when taken in small quantities regularly, with proper food and ordinary care of the body."

A critical inquiry indicated that John Blank was at least twenty years younger than the statements of the paper, that he had not served in the Mexican war, but had lived in a hill country, working on a farm in the summer, and burning charcoal in the winter. His history of spirit drinking was very doubtful, up to the age of 60, or about 20 years before he died. It is very possible that he drank cider, during the fall and winter, and the circumstances of his life showed that spirit drinking was not at all likely, even at long intervals.

He was known as a temperate man until the Civil war, and there were not the slightest reasons to suspect that he could have drunk regularly or in moderation. After two years' service in the Civil war, he came home suffering from some bowel complaint, and was given spirits as a medicine. This he continued for a long time. Later he had an attack of rheumatism. Spirits were a remedy for this. His family all died and he went to live with distant relatives, who were total abstainers. In all probability he drank very little, if any, with them.

For years he was a gate-tender on a railroad, and attended to business very carefully, and had no reputation of drinking, either to excess or moderately. The last year or two of his life, his mind failed him. He went to live in an infirmary and became obsessed with the thought that he had drunk all his lifetime, and should have spirits to keep him alive. He was given small quantities, more for its mental effect than otherwise.

A few weeks before death he became convinced that alcohol had done him irreparable damage, and he signed a pledge. Thus the facts and the newspaper statements differed very widely.

A TEMPERANCE LESSON.

The little town of Union had in the old days manufactured a good deal of cider brandy for the world, and the inhabitants had a

settled conviction, that alcohol in moderation, was a safe remedy as well as a food. Of course the two doctors in that town encouraged this belief, and gave spirits to their patients on occasion as a stimulant.

The elder of the two was occasionally intoxicated, and the impression prevailed that during this time he was a much better doctor, clearer in his judgment and more decided and energetic in his work. The other doctor drank at intervals, but did not get the reputation of being a better man under the influence of spirits than otherwise.

One day the junior doctor, evidently disturbed by the spirits, drove off an open bridge and was so badly injured that he died soon after. This brought additional labor for the other physician, who drank more than ever to keep up his failing strength.

In the spring of that year, malaria was prevalent. One day in the doctor's confused condition, he mistook the morphine bottle for the quinine, and on his rounds gave out freely of the former drug. A few hours later there was a panic among the friends and relatives of the patients. Each victim was plunged into profound slumber and the doctor was sent for in great haste. As soon as he realized his mistake, he rushed to his office and committed suicide. The panic deepened and physicians from all around were sent for. Two or three persons never awakened, and the others were with great difficulty kept alive.

The delusion that the doctor was a better and brighter man while under the influence of spirits passed away forever. Now that town demands total abstinence of all medical men who come there to practice. One young man had to move out for want of patronage. He discovered that this was due solely to his alcoholic breath. No one had any confidence in him. A vigorous temperance society started in the two churches and a new era came in.

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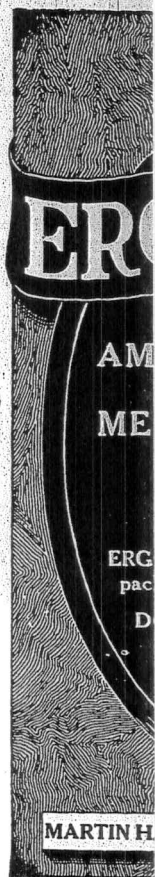
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Directory of Sanitariums.

We are pleased to present our readers with a list of some of the Sanitariums in the United States and Canada for their choice if they desire to make use of such an Institution. This list will be added to each month.

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