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THE DIAGNOSIS OF ALCOHOLIC COMA.\*

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GENTLEMEN,—I wish to draw your attention to a subject which has been of considerable interest to me, and which I hope will commend itself to you. It is one which has a social, as well as a markedly medical, aspect, and affects alike the physician and surgeon.

The medical journals and the ordinary newspapers contain, from time to time, paragraphs detailing instances of mistakes having been made by surgeons in determining the causation of insensibility. Thus, many persons have been pronounced to be suffering from alcoholic intoxication who, in reality, were affected by something more serious, such as concussion of the brain, fracture of the skull, opium poisoning, apoplexy, &c. The consequences of these mistakes have been very serious and often fatal, and many are the censorious remarks which have been levelled at those unfortunate enough to have made them. It is naturally asked, To what are these mistakes due? Though there are, no doubt, cases in which the mistakes have been justly attributed to the negligence of the surgeon, I am yet inclined to believe that the great majority of these mishaps have been due to the

\*Being the principal part of an Introductory Address delivered at the opening of the Glasgow Royal Infirmary School of Medicine, Session 1878.

obscurity of the subject, to the lack of information, and to some erroneous items supplied in medical works. Many men, of the highest professional standing, have written with the view of elucidating this subject, and though much has been done, it still remains, in some very important points, as obscure as before. This seems chiefly due to the fact that they have attacked it from one side only. A surgeon deals with the difficulty by pointing out the chief features in concussion of the brain and fracture of the skull; a physician, the principal points of apoplexy and opium poisoning, and these are clear enough by themselves; but as soon as they attempt to deal with the differential diagnosis between these states and alcoholic coma, you perceive that they enter a field, as far as the alcoholic coma is concerned, which is mainly unknown to them. As long as the diagnosis of alcoholic coma remains in doubt, one cannot differentiate between it and other states of insensibility. If an advance is to be made, alcoholic coma must first be dealt with, and if its characters are pointed out with sufficient distinctness, it will go a great way toward preventing those unfortunate mistakes which have so often been made, for they have mostly turned on the question, Is this person suffering from alcoholic coma or is he not? Even if you are able to state that a given insensible person is not suffering from alcoholic coma, then his state arises from a something which demands treatment in the wards of an hospital, or medical supervision elsewhere, and, in deciding to place him in such a position, you remove him from the danger of neglect, and afford an opportunity for that important element, time, to aid by the development of fresh data.

In proceeding to deal with this question, attention is naturally directed toward the literature of the subject, and without going into detail, I would briefly draw your attention to the sayings of two living authors.

A certain widely known and respected surgeon recently delivered a lecture on head injuries, in which he says:—"It is very important, indeed, to determine when a man is simply drunk, although he may be 'dead drunk.' It is usually not very difficult to make the diagnosis. His friends know what has occurred to him, and he smells strongly of drink, and is in that helpless condition which you see if a person is suffering from alcoholic poisoning. . . ." The professor goes on next to discuss the diagnosis when the case is complicated by head injury, which he then admits to be very difficult, if not impossible, until time decides the point.

You perceive the statement is to the effect that the diagnosis

is very easy, and certainly it would be so if the tests which he advances were of any value. He first presumes that the insensible man has friends, who have been with him, or who, at least, know of his immediate antecedents. If the friends told the surgeon what was wrong with the man, the surgeon would then have little difficulty in making his diagnosis. But this is entirely begging the question, as it is just in those cases where there are no friends able to give the history, that there is a difficulty. The second point which is advanced—viz., the strong odour of drink, is a very fallacious sign. It is the recognized custom, whatever injury may befall a man, to give him spirits, with the idea of sustaining him until a surgeon sees him. So, when a person is found lying insensible on the street, the first good Samaritan who passes endeavours to pour alcohol into the mouth of the insensible man, and in lieu of his not being able to swallow, drenches him well with the spirit. By the time the surgeon sees him, he will no doubt emit fumes of alcohol, and you will readily admit how erroneous it would be to conclude that he was, therefore, insensible from its effects. Again, a person may have imbibed alcohol sufficient to have produced an odour from his breath, and he may be rendered insensible from some other cause, such as concussion of the brain, apoplexy, &c., and how wrong it would be to say, on account of the odour from his breath, that he suffered from alcoholic coma. On the other hand, suppose an insensible person is found, whose breath does *not* smell of alcohol, it is not correct to conclude that he is therefore not suffering from alcoholic coma. Indeed, in many instances of alcoholic coma, there is no distinctive odour from the breath, and in many others the fume is acetous instead of alcoholic. So that neither, in its presence, nor its absence, is the odour from the breath of any value. The remaining sign this surgeon refers to in the following terms: "That helpless condition which you see if a person is suffering from alcoholic poisoning." It is a little difficult to grasp the precise meaning meant to be conveyed by the phrase. As it is, persons affected with opium poisoning, concussion of the brain, and fracture of the skull, are all at times seen in helpless conditions, so that if it cannot be expressed with greater exactitude, I am afraid it will afford little information in a diagnostic point of view. There is, therefore, no aid found on this particular point, in that lecture, and it contains one item which might lead to the formation of erroneous conclusions.

I now direct your attention to some incidental passages contained in those excellent lectures on "Alcohol," delivered

before the Society of Arts, by Dr. Richardson, in 1875. In these Cantor Lectures he makes passing reference to the point which I am at present discussing, though he restricts his observations to the differential diagnosis of apoplexy and alcoholic insensibility. He states that, in apoplexy, the temperature of the body is above, in drunkenness below, the natural standard of 98° of Fahrenheit's scale, and upon this statement he founds a distinguishing test. He also proposes that our police ought to be taught the art of taking the animal temperature, so that, among other things, it would enable them to suspect the difference between a man in an apoplectic fit and a man intoxicated.

Now, in order to make such a test of value to the police, it would require to be one which would distinguish alcoholic coma from all other kinds of insensibility likely to fall into their hands. It would be useless to say to them, if you find an insensible person having a temperature below 98°, this would indicate that he did not suffer from apoplexy, though it might be a case of fracture of the skull, opium poisoning, concussion of the brain, &c.; unless one were able to say that, all cases having a temperature below 98° might safely be reckoned as alcoholic coma, and treated as such, the test in their hands might not only be useless, but would be apt to lead into error. Now, this we cannot say, for the temperature in several of the affections spoken of falls at times below 98°, so that, as far as the police are concerned, this test would not afford them sure guidance. But though of no use to the police, this test would be of value scientifically, as well as to the surgeon, *if* it were reliable. There can be nothing more certain than a thermic test, as it supplies physical evidence, and is easily obtained. It has been well established that alcohol in excess reduces the animal temperature, and Richardson states that, as the fourth stage of alcoholism is approached, the decline in temperature becomes actually dangerous, and that in man the fall is often 2½° to 3°. Though the general fact of the reduction of the temperature was quite familiar to me, yet my experience in alcoholic insensibility indicated considerable variation in the temperature in different individuals; so much so, that I feared it might invalidate the trustworthiness of the thermic test. In order, however, to place the matter beyond doubt, I resolved that I would record the temperature in the next fifty cases of alcoholic insensibility which came under my observation.

I have now obtained a record of over fifty cases of the insensible from alcohol, which, for tabular convenience, I have restricted to fifty. I think it right to state that I was assisted in record-

ing these temperatures by my late house surgeon and friend, Dr. Pinkerton. These observations were rectal, and they were taken by instruments corrected and certified at Kew. The material, though largely composed of the poorer classes, was yet fairly representative of the various elements of society figuring in such a commercial centre as our own. The ages reached from eighteen months to sixty years: five being below twenty, nine between twenty and thirty, twenty between thirty and forty, thirteen between forty and fifty, one at fifty-eight, and two at sixty years. Of these, three were females. The observations extended over a year, and were made from 7 p.m. till 1 a.m., but the majority were made about 12 midnight. The temperature of the surrounding medium—viz., the room in which they were seen, ranged from 60° to 70° F. Some were, however, brought, within half-an-hour of the thermic observation, from the external atmosphere to which they had been exposed for variable periods. The whole of the persons whose temperatures are here recorded were so insensible that they could not be roused. The temperatures ranged from 98°·2 to 93°·4.

Two	were	recorded	at	.	.	98°·2.
Fourteen	"	"	from	.	.	97° to 97°·9.
Fifteen	"	"	"	.	.	96° to 96°·9.
Twelve	"	"	"	.	.	95° to 95°·9.
Five	"	"	"	.	.	94° to 94°·9.
Two	"	"	at	.	.	93°·4.

In this way eighty-two per cent ranged from 95° to 97°·9, and fourteen per cent from 93°·4 to 94°·9, while four per cent were at 98°·2. This gives a range of temperature of five degrees for alcoholic coma.

It must be borne in mind that these are rectal temperatures, and that Wunderlich reckons from one half to nearly a degree higher in the rectum than in the axilla.\*

It will be observed that many of these temperatures are very low. Taking Richardson's statement, that the temperature in alcoholic coma is reduced from 2½° to 3° below normal—(even leaving out of consideration the difference between the rectal and axillary temperatures), the lowest point ought to be 95°. Even this, according to former experience, would be reckoned a very low temperature, but the observations just recorded register five cases at 94°, and two at 93°·4, the latter being

\* "We may safely allow that the mean temperature of a healthy person is 98°·6; that of the vagina, or unloaded rectum, will be from 99°·1 to 99°·5 F."—*Wunderlich on Temperature.*

nearly two degrees lower. It need scarcely be added that these temperatures took me by surprise; so much so, that I was inclined to doubt their correctness, and to attribute the lowness to some peculiarity of the instrument or mode of observation. On narrowly scrutinizing both these points I could discover neither flaw nor error; and the cases presenting a temperature of  $94^{\circ}$  (and some decimal points) became sufficiently numerous to permit of the fact being put beyond doubt. The first observation at  $94^{\circ}$  was several times repeated before it was accepted. In like manner, when  $93^{\circ}\cdot4$  was registered, I said to one of my pupils, Mr. John Middleton, who was present, that some mistake had been made. The instrument was therefore readjusted and again introduced—this time fully three inches into the rectum—and retained there for six minutes, and again  $93^{\circ}\cdot4$  was recorded. So that there can be no mistake about that fact. The person on whom this observation was made recovered, and so did another case, having a temperature of  $93^{\circ}\cdot4$ ; but the latter had to be carefully watched for twenty-four hours, in the infirmary. From these facts it may be concluded that the temperature in man, during a state of alcoholic coma, has a latitude of five degrees; ranging from what may be considered normal down to  $93^{\circ}\cdot4$ . While alcoholic coma has a variable temperature, and, therefore, a thermic test cannot be absolute, yet, the greater majority of cases exhibit a marked depreciation in temperature. The question which must now be asked is, Whether the insensible from other causes than alcohol can be distinguished by this thermic test? In order that other causes of insensibility might be differentiated they would require to have a temperature above  $98^{\circ}\cdot2$ .

While carrying out those observations on alcoholic insensibility, I also made a note of the temperatures exhibited by several other causes of coma. Thus, the thermic state of persons suffering from *fracture of the skull* was noted, and while finding that the temperature was subject to very great fluctuation, it was seen, in several instances, that the temperature was much below the normal, in one case reaching as low as  $94^{\circ}\cdot4$  (vaginal temperature). Not only did the temperature vary in different cases, but it changed rapidly in the same individual within a short space of time. One instance gave a temperature of  $97^{\circ}\cdot2$  when first noticed; when the instrument was introduced two hours after, it indicated  $100^{\circ}$ , and within twelve hours from the first observation, it was  $104^{\circ}$ . Again, in two cases of *opium* poisoning, the temperature was much below the normal, the one indicating  $97^{\circ}$  the other  $96^{\circ}\cdot5$ , and I

have no doubt but that still lower temperatures may be recorded in severe cases of opium poisoning. Then, as regards *apoplexy*, it was found, in two personal observations, that the temperature of the one was below normal, the other about normal ( $99^{\circ}4$ ). As these two isolated observations would be of little service, in the way of drawing conclusions, I deemed it expedient to consult my friend and colleague Dr. Robertson, whose large experience in nervous affections placed him in a position to give an authoritative answer to this question. Dr. Robertson stated that, all his cases of apoplectic seizures, showed an initial reduction of temperature, and that within two hours of the seizure, the fall, as tested in the rectum, had been from one to two degrees. Another authority, Bourneville, one of Charcot's former pupils, divides these cases of apoplexy, due to cerebral hæmorrhage, into four categories, and for our present purpose it is enough to note that, in every one of these, there is an initial lowering of the temperature in apoplexy, and that it may even sink as low as  $96^{\circ}$ . In some cases this lowering continued until death; in others it was followed by either a stationary period, and then an increase, or by a rapid increase above the normal, without a period of rest. From these it is gathered that in apoplexy there is an initial lowering of the temperature, sinking one or two degrees, and sometimes even reaching  $96^{\circ}$ .

Thus it is seen, that an insensible condition proceeding from alcohol, fracture of the skull, opium poisoning, and apoplexy, are all of them subject, at times, to exhibit low temperatures, and, therefore, the thermic test *cannot* be relied on as a means of differential diagnosis between these various conditions.

Coming now to personal experience, it is incumbent upon me to state that, at first, I found the discrimination between the various causes of insensibility to be, in certain cases, one of the most difficult tasks, and had the current teaching and text book literature been followed, many serious errors would have been made. Observations showed that there was considerable divergence between the generally recorded opinion and the facts regarding alcoholic coma, and this was considered the weak point in the differential diagnosis. If the diagnosis of alcoholic insensibility were once elucidated, other causes of insensibility would the more easily be relegated to their respective origins. And, at least, if the matter of alcoholic insensibility were eliminated, the case would then assume, to the examiner's mind, a more serious aspect, and one demanding careful scrutiny and supervision; consequently it would preclude the possibility of accident from non-attention arising

from the apparent triviality of the case. It was, therefore, decided to examine closely the appearances of alcoholic coma.

Without occupying your time with details concerning this investigation, I will direct your attention at once to a point which I believe will facilitate the diagnosis of this question.

When first I had to deal with alcoholic coma, the text books invariably taught that the pupils in that state were dilated, whereas one case after another came under my observation, with contracted pupils, and as time went on, it became evident that this was the rule. Here, then, was a discrepancy between the generally received opinion and my observations, and the question as to the origin of this difference naturally presented itself. Either this must have been an error on the part of the observers, including myself, or the facts themselves must have varied. With regard to former observers, some, at least, of them could be relied on, and it was extremely unlikely that all of them had committed an error on such a simple point. But here were my own data, abundantly demonstrating the opposite state of the pupil. Was it possible that this divergence depended on some peculiarity in the alcohol consumed? This was extremely improbable, owing to the wide area from which the material for observation was supplied; the spirit used must have been of very varied kind and quality, manufactured by many makers, both home and foreign, so that it might be considered fairly representative of the kinds supplied in a great city. It could not, therefore, have been due to any peculiar kind of alcohol. While this question remained undecided, the cases showing contracted pupils still accumulated; but at last I found a case of undoubted alcoholic coma with a dilated pupil. Having satisfied myself as to that, I set to work to find out the cause of this peculiarity, making minute inquiries about his antecedents, the kind of alcohol he had consumed, &c.; all of which inquiries proved futile in the way of shedding light on the subject. Half-an-hour afterwards, on returning to the patient, accompanied by a medical friend to whom I intended showing the first case I had met with of alcoholic coma having dilated pupils, to my astonishment, on raising the eyelids, the pupils were then found contracted just as I had always found them in such cases. While endeavouring to elucidate the cause of this change, it occurred to me that the only alteration in his external condition, between this visit and the former, was the fact that on the first occasion he had been moved, having just been lifted on to a stretcher, carried up a stair, and then laid on a bench. Thinking, therefore, that movement might have produced this change on the pupils, it



was determined to test it. When about to carry out this project, he accidentally received a severe shake, when his iris immediately gave a series of waves, ending in a semi-dilated pupil, and after remaining in this state for some time, they slowly began to contract again, and in the space of twenty minutes they had assumed their former state of contraction. The shake was repeated experimentally, and though the patient was in no way roused thereby, yet his pupils underwent the dilatation and subsequent contraction in about the same time. Extended experience showed that the contracted pupil of alcoholic coma dilated on the application of external stimulus, such as by pulling the beard or hair, and that, as a rule, within half-an-hour, or less, the pupil again assumed its former contraction. But if the comatose state were about to pass off, the pupil, after it had been dilated by external stimulation, might then either only contract a little, but not to its former state, or it might remain in a semi-dilated condition. Here, then, is the probable solution of the discrepancy as to the state of the pupil. Former observers probably made their notes either at a period prior to coma, when the person was still attempting to move about, or if they were comatose at the time, efforts were probably being made to rouse them by shaking or other means, when the pupil would then present its dilatation. On the other hand, they were first seen by me while they were lying undisturbed in a deeply insensible state, and as they remained in that state the pupils were contracted. The pupil is contracted when the person is left undisturbed, and it is dilated when an attempt is made to rouse him. It is this order of succession which makes it characteristic, I may almost say, pathognomonic of alcoholic coma. Given an insensible person, who has lain undisturbed from ten to thirty minutes, who then presents contracted pupils, which dilate on the application of external stimulation (without in any way rousing the patient), and which, if the person is left undisturbed, begin to contract again within a short time, and I know of no other state to which this applies than alcoholic coma. It seems as if on the application of external stimulation, though the personal consciousness refuses to return, that the pupil half wakes up and then slowly drops to sleep again. It is nearer the state of the pupil in natural sleep than under any morbid condition, only, the pupils are more sluggish in their movements, and respond feebly to light and shade. The very process of shaking the person, necessary in this test, would at once rouse a sleeper, and so distinguish between sleep and coma, if this indeed were at all necessary.

In order to put this phenomenon of the alcoholic pupil to the test, it was resolved to take a note of fifty consecutive cases, and see whether this sign would remain a guide for alcoholic coma.

Of these fifty cases, forty-nine had contracted pupils. Forty-seven of these dilated on the application of external stimulation, and afterwards underwent contraction, either partially or quite to their former condition. In many instances this contraction took place in five minutes; in the majority from ten to twenty minutes elapsed before it occurred, while a few took as much as half-an-hour before the pupils had reached their former stage of contraction. One or two, though they did contract a little, yet did not pass the stage of medium, and in these cases the persons recovered from their insensibility very soon after. Now, two of the forty-nine cases that had contracted pupils were somewhat peculiar. In the one there was absolutely no dilatation on the application of stimulus; in the other, the pupil did slightly dilate, but only to a very limited extent, and that with great hesitancy, resembling, in this particular, the pupils of some cases of fracture of the skull.\* These two patients were watched pending the solution of these peculiarities. After they had recovered, the iris was seen to have been affected by former disease, in the one case fixing the pupil completely, in the other partially so.

The single case out of the fifty that had dilated pupils was found to have fallen a short time before coming under my observation, and this had, no doubt, sufficed to dilate the pupils, as they were found to have undergone contraction after the lapse of twenty minutes.

From these it is seen that ninety-four per cent of those suffering from alcoholic coma had contracted pupils, which dilated on the application of external stimulation; and the majority of these, after various intervals recontracted. Four per cent had contracted pupils, which, owing to physical peculiarity, would not dilate; while two per cent were dilated, owing to external stimulation, of an accidental kind, having been applied shortly before the observation was taken. But this last item may be deducted from the list of exceptions, as it, in reality, did not present a departure from the rule; the peculiarity being, that the observation began in the middle, as it were, when the pupil was found dilated. Therefore, it

\* In some cases of fracture of the skull having contracted pupils, on attempting to rouse the patient by shaking, the pupil *may* just very slightly enlarge (not dilate), but this is momentary, as it begins to contract almost immediately after.

may be said that ninety-six per cent of the cases responded to this test.

Now, it is important to note the precise conditions under which these observations took place; otherwise, they may lead into error. As a rule, the subjects of observation, here spoken of, had remained in the recumbent position for, at least, half-an-hour, prior to the pupil test being put into practice, though some few cases were seen after a much shorter time, and yet exhibited a quite characteristic pupil. From the mere statement regarding the dilatation of the pupil, under external stimulation, it may be inferred, that one condition necessary to the contraction of the pupil is, that the person be allowed to remain at rest for some time,—the exact time necessary I am not at present able to say, it varies according to the depth of the coma; but I believe half-an-hour to be ample, and I have seen it at the end of five minutes. The pupils were always contracted to such an extent as to enable any surgeon to pronounce them indubitably so. Many times they have been pin head, and they have been more than once mistaken by surgeons for those of opium poisoning. In the case of a child aged eighteen months, the pupils were so minute as to be barely discernible. I am speaking here of the comatose condition, but it may be noted by the way, that, in the lesser stages of alcoholic insensibility, they are less contracted and have a greater tendency to dilate on slighter external stimulus. Among these fifty cases I included only those persons who were absolutely comatose, and who, for the time, could not be roused.

Under these circumstances, the pupil test affords very ample means of identifying alcoholic coma, and any errors that might be made, owing to finding a fixed, contracted pupil, or even a fixed dilated one, would only be a slip on the safe side, on the side of extra caution, and not one that would lead to mischief.

I here wish to append one or two remarks concerning alcoholic insensibility.

Granted that a person is pronounced to be suffering from alcoholic coma, is it safe to leave him unattended? This must be clearly answered in the negative. One who suffers from alcoholic coma must be considered in a dangerous condition, owing to several complications which are apt to supervene. The one which is the most frequent and the most fatal is suffocation. There is no cause of sudden death so common, in my experience, as suffocation ensuing from alcoholic coma; and so well recognized among certain classes is the fatality which

attends this state, that it has been attempted for suicidal purposes; and, I fear, that in one or two instances, there has been a homicidal intent behind the apparent friendly administrations.

In the same manner as asphyxia sometimes ensues during the administration of chloroform, by the falling backward of the tongue, so suffocation sometimes supervenes during alcoholic coma. This happens most frequently when the person is in the recumbent position, with the head on the same level, or perhaps hanging backwards. But by far the most frequent cause of suffocation in this affection, is food getting into the larynx. Vomiting is frequent in many who suffer from coma, but it is especially a feature of alcoholic coma. Now, when the food is forced upward into the mouth, the person does not possess the power of expelling it, a fit of coughing ensues, which probably clears it away, but, in the long inspiratory efforts, some small portions are very apt to get into the air passages and occlude them. This vomiting may ensue at any moment during alcoholic coma, and may end fatally, unless persons suffering in this way are placed under the immediate and constant supervision of a man of ordinary intelligence, instructed to deal with such cases.

Apoplexy is by no means such a common sequent of alcoholic insensibility as suffocation; but it does occur, both as an immediate and as a secondary effect. Persons in a state of ordinary alcoholic coma, pure and simple, have been seized with apoplexy, and such cases are very fatal. Secondly, persons may recover from alcoholic coma, and, after a night's rest may rise and commence their toilet when, suddenly, they fall into an apoplectic fit. The cerebral vessels, during alcoholic coma, have been engorged, and, probably, some have been over distended, yet they have been able to bear the pressure put on them at that time. But with the reaction consequent on assuming the erect posture and moving about, one of the formerly weakened vessels no longer withstands the strain, and gives way. Some such cases have been fatal, while two, at least, have recovered. It is very important to bear in mind the fact, that apoplexy may supervene in alcoholic coma, otherwise, a surgeon seeing a case of alcoholic coma at an early stage, and pronouncing it to be such, might afterwards, if apoplexy were ensuing, be considered to have made an error in diagnosis. Surgeons have been blamed under such circumstances.

The mere mention of the low temperatures found in alcoholic coma points to another possible danger, especially if such

persons were exposed to extreme cold. I have known one case which, as far as could be ascertained, died from this cause. There is one very important property which alcohol produces in its advanced stage, and one which is not so fully borne in mind as it ought to be—viz., its tendency to anæsthesia:—in that stage prior to coma. Wounds of considerable magnitude have been received without the person becoming aware of the fact, and severe and dangerous hæmorrhage has ensued in certain cases before the attention of the friends or persons near have been arrested by the bleeding. It is commonly known that some persons sustaining fractures of the limbs, while under the influence of alcohol, make violent endeavours to use them with apparent immunity from pain, and in this way greatly aggravate the injury. On the other hand, the surgeon may take advantage of this state to sew and dress wounds, put up fractures, and reduce dislocations. Dozens of dislocated humeri have been thus reduced, and, on one occasion, a dislocated hip (dorsum of ilium), occurring in a very strong muscular farmer, was, without assistance, thrown in with facility.

After recovery from the effects of alcohol, the person generally feels his injuries more acutely, and at this stage makes a very petulant patient. But it is not so well recognized that, after the primary effects of alcohol have passed off, there remains, in some instances, a decided want of ordinary sensation. Every one knows how painful a broken rib is, and yet I have known a man who so far had recovered from the influence of alcohol as to be cool, intelligent, and reasonable, but he was so far oblivious to ordinary sensations as to experience no pains from four fractured ribs, with lung laceration to such an extent as to occasion emphysema all over the back, the neck, and one side. He had the frequent catching cough, characteristic of broken ribs, and when he was asked what he considered that was due to, he stated that he thought he had caught a little cold the night before. These fractured ribs, he had had for, at least, eight hours prior to the time of my seeing him, during which he had been for hours conversing with a medical student, and never once made reference to the side as being painful.

Paralysis of one or other arm is sometimes a sequent of alcoholic coma, but probably this is due to postural causes, pressure being exercised on the brachial plexus. Sometimes this passes off in a few days, but at times it is very tedious.

In the great majority of instances, the bladder is emptied involuntarily, without producing over-distension; this, however,

sometimes happens, and in such cases, serious consequences have followed. In this state I have drawn off large quantities of urine; on one occasion as much as ninety fluid ounces! One person who lay in bed, insensible from alcohol, was found with a ruptured bladder. This case was reported in the *Lancet* at the time. In one or two instances a state, to all appearances, that of uræmic coma, has been seen, the bladder having been greatly distended with urine; the sleep of alcoholic insensibility passing into that of uræmic coma, and death; no disease of the kidneys was found in one such case. In one instance a similar case was mistaken for opium poisoning, and treated during some hours for such by a physician. The true nature of the complaint was seen afterwards, and the man ultimately recovered.

ON A CASE OF ADDISON'S DISEASE IMPROVING UNDER TREATMENT, AND ON THE RELATIONSHIP BETWEEN ADDISON'S DISEASE, VITILIGO, AND ALOPECIA AREATA.

By DR. M'CALL ANDERSON,  
Professor of Clinical Medicine in the University of Glasgow.

(Read before the Glasgow Medico-Chirurgical Society, 1st Nov. 1878).

GENTLEMEN,—It is not my intention to enter fully into the subject of Addison's Disease, but merely to show you a patient who has been very greatly improved by treatment, and to refer generally to the possible connection between this disease, Vitiligo, and Alopecia Areata. The lad referred to is 19 years of age, a wood turner, and was admitted into the Western Infirmary on the 16th July, 1878, suffering from loss of appetite, extreme languor, and debility. He seems to come of a tolerably healthy family, although his brother is suffering from some form of lung affection. He was always strong and well until about five months prior to admission, when his appetite began to fail. He lost all inclination for food, and was inclined to sleep, or to sit languidly at the fireside. Exertion of any kind was very distressing to him, and he gradually lost flesh. Shortly after this his friends began to remark that his skin was becoming darker in colour, although he was always somewhat swarthy. There has been no change, however, in his hair, either as regards texture or colour; and although anorexia has been a prominent symptom, he has never suffered from nausea or vomiting.