

Therapeutical Inquiries.

V.—JAUNDICE.

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PROFESSOR BENNETT and Dr. Handfield Jones have so fully explained the object of the Committee on the Action of Medicines, and so ably pointed out the manner in which the labours of our two thousand associates may be rendered of incalculable service to the advancement of rational medicine, that little remains for me to do beyond the mere calling attention to the annexed schedule.

It will be remembered that this inquiry is "on the action of mercurials, benzoic acid, and podophyllin, in jaundice". Now, as jaundice cannot be regarded as a disease *per se*, but must be looked upon simply as the most prominent symptom of various morbid conditions, in filling up the schedule it will be necessary to state, as nearly as possible, the cause of the jaundice. Thus, for example, special care should be taken to note—

1. If it originate in some diseased condition of the liver itself, such as inflammation, cancer, or cirrhosis.

2. If the jaundice arise from some obstruction to the flow of bile into the intestines, as occurs when the common gall-duct is obstructed in its course by a gall-stone, or at its outlet by a tumour of the pancreas.

3. If the jaundice be the secondary result of some disease in another organ of the body, as, for example, when it supervenes on pneumonia or heart-disease.

4. If it be the concomitant of blood-poisoning, such as is occasionally observed in typhus and other fevers; or as the direct effect of the introduction of certain poisons into the system.

5. If the jaundice have been induced through the direct influence of the nervous system upon the biliary function, as from fright, etc.

It would be well to examine the urine in every case, not only as to the quantity of bile-pigment it contains, which in the majority of cases can be tolerably well estimated by the naked eye; but also as to the presence or absence of the biliary acids, in order to ascertain whether the jaundice is the result of a suppression of the biliary function, or of an obstruction to the flow of bile into the intestines.* In all cases where there is any suspicion of atrophy of the liver taking place, whether acutely or chronically, it would be highly interesting to observe if the urine contain leucine and tyrosine, the crystals of which are readily detected in the concentrated urine by means of the microscope, leucine appearing as

* The simplest way to test for bile-acids is to put about a couple of drachms of urine into a test-tube, drop in a fragment of white sugar of the size of a pea, and then add slowly, by pouring down the side of the tube, a drachm of strong sulphuric acid. If bile-acids be present, a fine violet or purple colour will be produced at the line of contact of the urine and acid; if absent, only a browning of the sugar will be observed. The former result indicates that the case is one of obstruction; the latter, if the jaundice be recent, that it is one of suppression.

round yellow balls, tyrosine as needles and stars. The stools should in all cases be observed, not only to ascertain their colour, but also with the view of finding gall-stones or fatty matter in them. If, in addition to the above, the physical condition of the liver be noted both before and during the treatment, important information can scarcely fail to be elicited.

I have only one word further to add, and that is regarding the remedies. As far as the action of mercurials is concerned, nothing need be said; but a few remarks may be necessary on the action of the other two drugs. Benzoic acid has lately been largely administered in cases of jaundice, under the belief that it restores the secretion of bile, and at the same time removes the yellowness of the skin by hastening the elimination of the pigment by the kidneys. The dose is from two to six grains three times a day, in the form of pill.

Podophyllin or May-apple, the American remedy, is said to possess both the alterative and the purgative effects of mercury. As an alterative, it is given in doses varying from one-eighth to one-fourth of a grain three times a day; and as a purgative, from one-fourth to one grain as a single dose. Its purgative action is rather slow in manifesting itself, and therefore it is best given over-night; and, should it fail to produce its effects within a couple of hours after rising, the dose ought to be repeated, and its action courted by means of warm drinks. There is one disadvantage connected with this drug; namely, that in nervous females it occasionally gives rise to disagreeable griping.

Original Communications.

MEDICAL PSYCHOLOGY.

By ROBERT DUNN, F.R.C.S.E.

III. On the Psychological Phenomena or Symptoms of Disease.

[Concluded from page 573 of last volume.]

The Phenomena of Memory in Disease. Memory, as the associate of ideation and volition, is an attribute both of the perceptive and of the intellectual consciousness; for, as I have already observed, wherever the hemispherical ganglia exist, and in however rudimentary a state of development, there we invariably have unmistakable evidence of the manifestations of memory. Thus, it is the common inheritance of the lower animals; of the whole of the vertebrate subkingdom, as well as of man; and however inscrutable its phenomena, they are evidently dependent upon organic instrumentality for their manifestation. But in the consideration of this subject, we must never forget the distinction that exists between simple memory, as displayed by the lower animals as well as by man, and which is an attribute of the perceptive consciousness, and the faculty of recollection which man alone possesses—that power of the intellect of reviving, recalling, and combining, by an act of volition or the will, previous mental conceptions, trains of thought and states of consciousness; for this is an attribute of the intellectual consciousness, and like speech, the sole prerogative of man. "There is no reason to believe that any animal, however high in the scale of intelligence, exercises or possesses the recollective faculty of the will." (Sir H. Holland.)

How we can, by an act of volition, revive past states

of consciousness and trains of thought, or how it can happen, as in cases of injury to the brain, and in fevers, that the knowledge, for instance, of a language, apparently obliterated and long forgotten, should be suddenly recalled, can only admit of a satisfactory explication on the assumption, that our mental possessions, when duly registered, are, like matter and the physical forces, indestructible. Dr. McCosh has well observed:—"What is true of material particles is no less true of the physical forces. Man cannot create a physical force, and as little can he destroy it. If it be in a statical state, he may bring it forth into a dynamical one; if it be in activity, he may contrive to counteract it; but he cannot create it, on the one hand, nor put it out of existence, on the other. The force which came from the sun to the planets in the form of heat, in the geological age of the coal formation, is not lost; it was received by the vegetable organisms; it was laid up in the strata of the earth; and it is ready to burst forth, on the needful conditions being supplied in fire and flame, and to be a source of mechanical force in steam." He then asks: "If no material particle is ever lost, and no physical force lost, is it consistent with the analogy of nature to suppose that mental force is lost?"* (Dr. McCosh on the *Intuitions of the Mind*.)

The assimilative power of the blood is not less mysterious and inscrutable to us, than the permanent and indestructible character of our psychical possessions. How, for instance, the vaccine virus, introduced into the

* On the permanent impression of our words and actions on the globe we inhabit, Mr. Babbage observes:—"The pulsations of the air once set in motion by the human voice cease not to exist with the sounds to which they gave rise. The waves of air thus raised, perambulate the earth and the ocean's surface, and in less than twenty-four hours every atom of its atmosphere takes up the altered movement due to that infinitesimal portion of the primitive motion, which has been conveyed to it through countless channels, and which must continue to influence its path throughout its future existence. Thus considered, what a strange chaos is the wide atmosphere we breathe! Every atom, impressed with good and with ill, retains at once the motions which philosophers and sages have imparted to it, mixed and combined in ten thousand ways with all that is worthless and base. The air itself is one vast library, on whose pages are for ever written all that man has ever said, or woman whispered. There, in their mutable but unerring characters, mixed with earliest as well as with the latest sighs of mortality, stand for ever recorded, vows unredeemed, promises unfulfilled, perpetuating, in the united movements of each particle, the testimony of man's changeful will.

"No motion impressed by natural causes, or by human agency, is ever obliterated: the furrow which is left, indeed, on the surface of the disturbed ocean, by every canoe and vessel, is instantly filled up by the closing waters; but they draw often those other and larger portions of the surrounding element, and these again, once moved, communicate motion to others in endless succession. The solid substance of the globe itself, whether we regard the minutest movement of the soft clay which receives its impression from the foot of animals, or the concussion arising from the fall of mountains rent by earthquakes, equally communicates and retains, through all its countless atoms, their apportioned shares of the motions so impressed. Whilst the atmosphere we breathe is the ever living witness of the sentiments we have uttered, the waters and the more solid materials of the globe bear equally enduring testimony of the acts we have committed. If the Almighty stamped on the brow of the earliest murderer the indelible and visible mark of his guilt, he has also established laws by which every succeeding criminal is not less irrevocably chained to the testimony of his crime; for every atom of his mortal frame, through whatever changes its severed particles may migrate, will still retain some movement derived from that very muscular effort by which the crime itself was perpetrated. The soul of the negro, whose fettered body, surviving the living charnel-house of his infected prison, was thrown into the sea to lighten the ship, that his christian master might escape the limited justice at length assigned by civilised man to crimes, whose profit had long gilded their atrocity—will need, at the last great day of human account, no living witness of his earthly agony. When man and all his race shall have disappeared from the face of our planet, ask every particle of air still floating over the unpeopled earth, and it will record the cruel mandate of the tyrant. Interrogate every wave which breaks unimpeded on ten thousand desolate shores, and it will give evidence of the last gurgle of the waters which closed over the head of the dying victim; confront the murderer with every corporeal atom of his immolated slave, and in its still quivering movements he will read the prophet's denunciation of the prophet-king—'And Nathan said unto David: 'Thou art the man.'" (*The Ninth Bridgewater Treatise*, by Chas. Babbage, Esq., pages 108 to 117.)

blood in infancy, should produce such an abiding organic change in its constitution and character, as to exercise a protective influence against small pox in after life, and while the blood is undergoing and has undergone countless changes and modifications. "The stamp once impressed by an inoculable disease is retained; the blood, by its non-formative power, exactly assimilating to itself, its altered self, the materials derived from the food. The tissues once affected, may, and often do in such cases, recover; they have gained their right or perfect composition; but the blood, by assimilation, still retains its taint, though it may have in it not one of the particles on which the taint first passed; and, hence, after many years of seeming health, the disease may break out again, from the blood, and affect a part which was never before diseased. In all such cases, we have proofs of the surpassing precision of the formative process—a precision so exact that, as we may say, a mark once made upon a particle of blood or tissue is not for years effaced from its successors." (*Paget's Surgical Pathology*.)

"But it has been asked," says Mr. Paget, "how can the brain be the organ of memory, when you suppose its substance to be ever changing? Or, how is it that your assumed nutritive change of all the particles of the brain is not destructive of all memory and knowledge of sensuous things, as the sudden destruction by some great agency is?" And his answer is: "Because of the exactness of assimilation accomplished in the formative process; the effect once produced by an impression upon the brain, whether in perception or in intellectual act, is fixed and there retained; because the part, be it what it may, which has been thereby changed, is exactly represented in the part which, in the course of nutrition, succeeds to it. Thus, in the recollection of sensuous things, the mind refers to a brain in which are retained the effects, or rather the likenesses of changes that past impressions and intellectual acts had made. As, in some way, passing far our knowledge, the mind perceived and took cognisance of the change made by the first impression of an object acting through the sense organs on the brain, so afterwards it perceives and recognises the likeness of that change in the parts inserted in the process of nutrition."

An able critic has sagaciously asked: "Who shall tell, that it may not yet be shown that the memory is a material garner, in which are stored, as an actual presence, the images it recalls? It is not the eye that sees, or the microscope, or any other optical instrument. These merely transmit the representation which is to be received elsewhere. The eye may be perfect in its structure; but some pressure behind, on the optic nerve, or on the sensorium, prevents the conveyance or the perception of the image, and there is no vision; for it is clear that, to produce this, the picture must be carried in its integrity to the point at which it becomes cognisable. The skill of the photographer has rendered us familiar with pictures, in which considerable groups of figures, with their adjuncts, are so inconceivably minute, that they are only visible, yet then distinctly visible, when under a powerful microscope. Who then shall say that sees these triumphs of art, and knows the greater wonders of nature, that memory does not work through the impression of an actual photograph inscribed and retained within the brain; as if it were but a part of the very limit of our faculties, that we discover nothing in art which has not previously existed in nature? We possess no analogies for similar impressions from other sources; but there is nothing contradictory in the idea that sound, more turbulent in its movements than light, may also, in its own way, impress its phonograph or phonotype on the brain, and so of the other senses. To recall a scene then, or a set of features, or a landscape, or a strain of music, may be merely to direct the faculty which first perceived, on that point where the impression

was first perceptible, and where it has since remained; and if age bring back the recollections of youth better than those of yesterday, it is but because the undeteriorated apparatus sufficed better, at the one period than at the other, to transmit and to preserve the necessary impressions, which the mind is otherwise still sound enough to appreciate." He concludes: "When we stand in wonder before that ineffable power which has joined matter to intelligence, and which has made it conscious not only of self-existence, but of other existences, so as to enable it to act upon these through observation and reason, we shall be ready to own with Tillotson, that a perfect knowledge of nature is nowhere to be found, but in the Author of it; and that no less wisdom and understanding than that which made the world, and contrived the vast and regular frame of existence, can thoroughly understand the philosophy of it, and comprehend so vast a design." (*British and Foreign Medico-Chir. Review*, vol. XIX, p. 103.)

The young woman's case to which I have so often alluded has an important bearing in reference to memory and the imperishable nature of our mental acquisitions. The first fit which she had after she had been dragged out of the river left her deprived of the power of speech and hearing, and of the senses of taste and smell; with her mental faculties quite benumbed or paralysed, her only medium of communication with the external world being through sight and feeling. All her former knowledge and past experience appeared to be obliterated, or, at least, for the time to be buried in oblivion; with one exception—a feeling of fright or dread in connexion with water. But after a time, as I have detailed in the narrative, she began again *de novo*, like a child, to acquire knowledge and to register experience. She made some progress while in this abnormal state; but after the second fit, which occurred more than twelve months afterwards, and which to her proved critical and sanitary, it was found that, when the insensibility had passed off, she was no longer spell-bound; the veil of oblivion was withdrawn; and, as if arousing from a sleep of twelve months duration, she awoke in the possession of her natural faculties and former knowledge, but without the slightest remembrance of anything which had taken place during the interval from the invasion of the first fit to her awaking up from the second.

Dr. Forbes Winslow, in his chapters "On the Morbid Phenomena of Memory", in his work *On Obscure Diseases of the Mind and Brain*, has collected together a mass of curious information, highly interesting to the medical practitioner; but I must content myself by briefly adverting to the influence which some of the ordinary forms of disease, coming daily under our notice in general practice, have in impairing the memory or in destroying its integrity. Memory being an attribute both of the perception and of the intellectual consciousness, I can readily understand how it is, as all metaphysicians have agreed, that we remember qualities better than we remember names; from the fact that the one is an intuitive experience and the other an intellectual act.

The morbid phenomena of memory, as might be expected, are most marked and striking in cerebral diseases—for instance, as in *ramollissement* of the superficies of the brain; for the hemispherical ganglia constitute the nervous apparatus both of the perception and intellectual consciousness. "A certain vague wandering and difficulty of recollection often occur as the first indications of this disease coming on; while its progress is attended with increasing incapacity either for receiving new impressions or recalling and combining those of earlier date. Such cases of slowly progressive cerebral disease are well worthy of close attention, from the sort of analysis they afford of mental acts and functions, not equally separable in the healthy state." (Sir H. Holland.) In all cases of pressure on the cerebral sub-

stance, whether as an accident from depression of bone, from local extravasation of blood on the superficies, or general congestion of the cerebral vessels, we almost invariably find the memory affected. Apoplectic seizures have often, as precursory warnings, singular lapses of memory; and these, when present, ought always to arrest our attention. On the other hand, anæmic conditions and a feeble circulation through the brain are often accompanied with disturbance and impairment of the memory. Such, too, are the effects of exhausting diseases, which may leave it long enfeebled, though not permanently affected and weakened.

With the effects of paralysis and epilepsy on the memory we are all familiar, though the phenomena of the former are of a very varying character, and among those of the most curious that come under our notice. "Strange infirmities of the memory are associated with cerebral disease, and justly to be regarded among its symptoms; huge blanks in the backward gaze; fitful suspensions of the remembering power; partial glimpses of the past; resurrections of thoughts long buried in oblivion! Even in its natural decay from age, there are curious things to be noted. Recent events are retained with difficulty and soon forgotten, while those of older date are easily and accurately recalled; as if the effort of attention stamped characters upon the material fabric which are deep and lasting in the youthful brain, faint and soon effaced on the aged. But disease may revive things long forgotten; a language long unspoken and unthought on; or blot out entirely all traces of definite portions of time gone by." (Dr. Watson, *Practice of Physic*.) "Sudden, transient, and paroxysmal attacks of the loss of memory ought to be regarded as important symptoms, in relation to a questionable state of the brain. These temporary and apparently trifling conditions of impaired retention are often the preludes to serious manifestations of cerebral disease—the dark and threatening clouds that occasionally envelope, obscure, and often eclipse the mind, previously to fatal attacks of paralysis, softening, apoplexy, and insanity." (Dr. Forbes Winslow, *On Obscure Diseases*.)

The other morbid phenomena of the intellectual consciousness—those of volition or the will, the imagination, and the reasoning and reflecting powers—are not within the scope of my object in these papers, though highly interesting to the medical practitioner, and, of all others, the most so to the psychological inquirer. They belong to the category of mental diseases, and the best information respecting them will be found in such works as Dr. Conolly's valuable treatise *On the Indications of Insanity*. The delirium of fever may be considered as the insanity of disease; and I have already observed how difficult, if not impossible, it is to distinguish the morbid phenomena of true delirium tremens from certain recognised forms of insanity.

CONCLUSION. In closing these papers on medical psychology, written at spare moments, amidst the distractions of an active medical practice, I would briefly observe that my object will be realised if they should act as a stimulus to thought, and arouse the attention of my professional brethren in general practice to the importance of the psychological phenomena or symptoms of disease; if they conduce to the study of the phenomena of the mental states in health and disease, and lead to the investigation and specialisation of the nervous apparatus or organic instrumentality through which these phenomena are manifested in this life. My own meditations and opinions I have freely and candidly put forth; nor have I hesitated—but never, I trust, without due acknowledgment—to quote from and to give the opinions of others. If mistaken in anything I have advanced, I am open to conviction; always feeling as thankful for being convinced of an error as I am happy in embracing a truth.