With the Author's Regards

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BENJAMIN RUSH, AS MATERIALIST AND REALIST.

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BENJAMIN RUSH, AS MATERIALIST AND REALIST.[1]

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Dr. Benjamin Rush, of Philadelphia, was the most con- [89]
spicuous of the American medical materialists of the eighteenth century. Born of English stock in Pennsylvania in 1745, at school under the Reverend Samuel Finley, the later head of Nassau Hall, then at Princeton itself under President Samuel Davies, he learned the rudiments of medicine from Dr. John Redman. Obtaining his medical degree in Edinburgh University, walking the London hospitals, and helped by Franklin to study in Paris, he returned to America in 1769 and became in turn professor of chemistry in the Medical College of Philadelphia, physician-general of the continetal army of the middle department, and professor of the institutes of medicine in the new University of Pennsylvania.

Subjected to the varying influences of Anglo-American deism, Scottish realism, and British and French materialism, Rush's philosophical remains range from an undergraduate transcription of the metaphysical system of Dr. Davies, and a translation at the age of seventeen of the *Aphorisms of Hippocrates,* to his *Thoughts on Common Sense,* and a final volume on the *Diseases of the Mind.* It was in regard to this last work that he made the interesting statement that the diseases of the brain should be watched, since they often produce discoveries of the secret powers of the mind; like

[1] A chapter from a forthcoming volume on American Philosophy, read at a meeting of the Johns Hopkins Historical Club, December 10, 1906.

[89] convulsions of the earth, which throw up metals and precious stones, they would otherwise have been unknown forever.[2]

As in his speculations Rush was a living compromise between various divergent schools of thought, so in his numerous public activities he was a personal paradox: in politics a signer of the Declaration, yet a maligner of the military genius of Washington; in education an agent in bringing President Witherspoon to Princeton and President Nisbet to Dickinson, yet a philistine as regards the study of the classics; in philanthropy an opponent of capital punishment and of slavery, yet a believer in the most drastic measures to stamp out the yellow fever; in medicine a pioneer in psychiatry, yet the originator of a species of phrenology. The dual nature of the man is outwardly shown in his portrait, which represents him in a pensive and yet a self-conscious attitude, his head in his hand but one eye cocked on the observer. So, from his works and his looks Rush may be judged to be rather profuse than profound,—a hard-headed philosopher, dealing in what he was pleased to call the practical metaphysics of the mind. Mere theories did not disturb him. When at Edinburgh he was thrown with David Hume, but no traces of that subtle sceptic are to be found in his thought. At home he received from Jefferson a confidential copy of the *Syllabus of the Doctrines of Jesus,*[3] but that did not shake his orthodox beliefs.

In a word, Rush was an eclectic. He took what he wanted and left what he did not like. Consistency was not his, for he was influenced in turn by deism, realism, and materialism. The influence of the first appears in the teleological trimmings of his system, the moral bearings he gave to his physiology and psychology. Like Hartley, he was not content with examining man's frame, but extended his observations to his duty and his expectations. Likewise in his realism the good doctor was wont to pick and choose. For common sense he found use at first rather in a political than in a philosophical sense. He had suggested the term as a title for Thomas Paine's revolutionary pamphlet of 1775, but by

[2] Purnell MS., p. 50.

[3] Jefferson Works, Ford. ed. 8, 223. Letter to Rush, April 21, 1803.

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1791 he writes that he had long suspected the term to be [89]
applied improperly to designate a faculty of the mind.[4] Here [90]
he will not repeat the accounts which have been given of it, from Cicero and Berkeley to Hobbes and Hume, but will confine himself to differing with Reid's account of the matter. Instead, then, of considering it a faculty or part of a faculty, possessing a quick and universal perception of right and wrong, truth and error in human affairs,—he will define it simply as opinions and feelings in unison with the opinions and feelings of the bulk of mankind. From this definition it is evident that common sense must vary with the progress of taste, science, and religion. Thus it is contrary to common sense to speak in favor of republicanism in Europe or of monarchy in America; it is contrary to common sense to use opium, bark, mercury, or the lancet, but agreeable to it to revenge public and private injuries by wars and duels; common sense in Great Britain and the United States is in favor of boys spending four or five years in learning Latin and Greek, whereas it is contrary to right reason to teach them words before they are taught ideas. In fine, to say that a man has common sense, is to say that he thinks with his age and country, in their false, as well as their true opinions. After all that has been said in its favor, one cannot help thinking that it is the characteristic only of common minds. Had this common sense depended upon the information of the five external senses, one would have no difficulty in admitting Dr. Reid's account of it. But to suppose it the first act of the reason and afterwards to suppose it to be universal is to contradict everything that history and observation teach us of human nature. And yet in the progress of knowledge, when the exact connection between the senses and reason is perfectly understood, it is probable that the two will be in unison with each other, but this unison as in the case of vision—where the reason connects the distance of objects with the evidence of the eyes,—must be the result only of experience and habit.[5]

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[4] Thoughts on Common Sense, p. 249.

[5] Ibid., pp. 251-4.

[90] To judge from this diatribe against the "doubtful faculties of taste and intuition,"[6] Rush must have suffered from that overdose of realism which he got in his undergraduate days and while a student at the Scottish capital. The reaction sent him over into the English materialism. The transition between the two is exactly marked by the title of his best known essay, the *Influence of Physical Causes upon the Moral Faculty*. Delivered before the American Philosophical Society in 1786, this exhibits a vocabulary borrowed from speculative Edinburgh, but an application suitable to utilitarian Philadelphia. The moral faculty, to borrow the term of Beattie, may be called the moral sense of Hutcheson, the sympathy of Adam Smith, the moral instinct of Rousseau, the regula regulans of the schoolmen; it may be a native principle, a capacity in the human mind of distinguishing good and evil, a faculty quick in its operations, and like the sensitive plant acting without reflection,—it may be all these things, and yet, at the same time, be subject to physical influences.

Do we observe a connection between the intellectual faculties and the degrees of consistency and firmness of the brain in infancy and childhood? The same connection has been observed between the strength as well as the progress of the moral faculty in children. Do we observe instances of a total want of memory, imagination, and judgment, either from an original defect in the stamina of the brain, or from the influence of physical causes? The same unnatural defect has been observed, and probably from the same causes, of a moral faculty. A nervous fever may cause the loss not only of memory but of the habit of veracity. The former is called amnesia, the latter unnamed malady will compel a woman, be she even in easy circumstances, to fill her pocket secretly with bread at the table of a friend.[7]

For instances and reasonings like these, drawn from his own experience and practice, Rush has been designated the

[6] Purnell MS., p. 81.

[7] Moral Faculty, pp. 6, 7.

father of psychiatry in America.[8] In venturing upon this [90]
untrodden ground the doctor confesses that he feels like
Æneas when he was about to enter the gates of Avernus, but
without a Sibyl to instruct him in the mysteries before him.
He therefore begins with an attempt to supply the defects of
nosological writers by naming the partial or weakened action
of the moral faculty *micronomia,* its total absence *anomia.*
But to name these derangements is not to explain them; they
may be caused not only by madness, hysteria, and hypochon-
driasis, but also by all those states of the body which are
accompanied by preternatural irritability, sensibility, torpor,
stupor, or mobility of the nervous system. It is in vain to
attack these accompanying vices, whether of the body or of
the mind, with lectures upon morality. They are only to be
cured by medicine and proper treatment. Thus the young
woman, previously mentioned, that lost her habit of veracity
by a nervous fever, recovered this virtue as soon as her system
recovered its natural tone.[9] Furthermore, it makes no differ-
ence whether the physical causes that are to be enumerated
act upon the moral faculty through the medium of the senses,
the passions and memory, or the imagination. Their action
is equally certain whether they act as remote, predisposing, or
occasional causes. For instance, the state of the weather has
an unfriendly effect upon the moral sensibility, as seen in the
gloomy November fogs of England; so does extreme hunger,
as in the case of the Indians of this country who thus whet
their appetite for that savage species of warfare peculiar to
them. Again, the influence of association upon morals is
strong. Suicide is often propagated by the newspapers and
monstrous crimes by the publication of court proceedings.
And as physical causes influence moral, so do they influence
religious principles. Religious melancholy and madness will
yield more readily to medicine than simply to polemical dis- [91]
courses or casuistical advice.[10]

In this presentation of the influence of physical causes

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[8] W. Pepper, Journal of the American Medical Association, April 26, 1890, p. 6, note 2.

[9] Moral Faculty, p. 26.

[10] Moral Faculty, pp. 42, 47.

[91] upon the moral faculty, its advocate anticipates the objection raised to it, from its being supposed to favor the materiality of the soul. And yet he does not see that this doctrine obliges us to decide upon the question of the nature of the soul, any more than the facts which prove the influence of physical causes upon the memory, the imagination or the judgment. The writers in favor of the immortality of the soul have done that truth great injury, by connecting it necessarily with its immateriality. The immortality of the soul depends upon the will of the Creator, and not upon the supposed properties of spirit. Matter is in its own nature as immortal as spirit. It is resolvable by heat and mixture into a variety of forms; but it requires the same almighty hand to annihilate it, that it did to create it. It would be as reasonable to assert that the basin of the ocean is immortal from the greatness of its capacity to hold water, or that we are to live forever in this world, because we are afraid of dying,—as to maintain the immortality of the soul from the greatness of its capacity for knowledge and happiness, or from its dread of annihilation.[11] On another occasion and in a less figurative way, Rush strove to disentangle the popular confusion between these two concepts. The writers to whom he now specifically refers are Plato and Cicero, Locke and Priestley. Regarding the nature of the mind, he says, the two first suppose it to be immaterial and independent of the body. Locke supposes it to consist of a matter, exquisitely fine, and connected with the body; that it is incapable of existence without the body, but that it does not perish with the body. Priestley supposes that there is no such thing as a mind either material or immaterial. With this meager reference to the Northumberland advocate of the homogeneity of man, the student who took these notes passes with unconcealed delight to a doctrine apparently different from all the variant forms, ancient and modern. Dr. Rush, he explains, believes that the mind is immaterial, that it can exist independently of the body, and that there is no necessary connection between the immateriality and immor-

[11] Moral Faculty, p. 19.

tality of the mind, the one being a divine attribute, the other [91]
a divine gift.[12]

Returning from this digression, the immaterialistic materialist comes to a defence of his main proposition,—the universal and essential existence of a moral faculty in the human mind. He apologizes for presuming to differ from such a justly celebrated oracle as Locke, yet holds that the latter has confounded this moral principle with reason, just as Lord Shaftesbury has confounded it with taste, since all three of these faculties agree in the objects of their approbation, notwithstanding they exist in the mind independently of each other.[13] One may admit with Locke that some savage nations are totally devoid of the moral faculty, yet it will by no means follow that this was the original consitution of their minds. As well might we assert, because savages destroy their beauty by painting, that the principles of taste do not exist naturally in the human mind. It is with virtue as with fire. It exists in the mind as fire does in certain bodies, in a latent or quiescent state. As collision renders the one sensible, so education renders the other visible. It would be as absurd to maintain, because olives become agreeable to many people from habit, that we have no natural appetite for food, as to assert that any part of the human species exists without a moral principle, because in some of them it has wanted causes to excite it into action, or has been perverted by example. There are appetites that are wholly artificial. There are tastes so entirely vitiated, as to perceive beauty in deformity. There are torpid and unnatural passions. Why, under certain unfavorable conditions, may there not exist also a moral faculty, in a state of sleep, or subject to mistakes?[14] Ending with one of the author's habitual rhetorical flourishes this passage leaves an impression of weakness. But while it makes the moral principle a poor thing, incapable of affecting positive results, leading to no where in particular, the suggestion as to artificial and vitiated tastes opened a

[12] Purnell MS., p. 81.
[13] Moral Faculty, p. 17.
[14] Moral Faculty, pp. 15, 16.

[91] fruitful line of inquiry, leading indirectly to the last and most important work on the diseases of the mind.

Having considered the influence of physical causes upon the moral faculty Rush next takes up "the influence of physical causes in promoting an increase of strength and activity of the intellectual faculties of man." Delivered as an introductory lecture to his students in 1799, it exhibits a growing tendency towards materialism, together with a more cautious avoidance of metaphysical speculations. The writer confines himself only to those agents which increase the quantity of mind, leaving the causes which lessen it to a later pathology. He then passes by the knotty questions of the theoretical nature of the mind, deeming it sufficient for his present inquiry to believe that all its operations are the effects of bodily impressions, a belief according with the axiom of the schools—"nihil est in intellectu quod non prius fuit in sensu." [15]

In employing the trite maxim of sensationalism and treating the mind as if it were a pint measure, the speaker is but adapting his remarks to the capacities of his hearers. Desiring to present facts intelligible to the youngest student of medicine, he brings in anecdotes which savor more of natural history than of mental philosophy. Such are the bits of information that Jonathan Edwards rode a trotting horse to stimulate his thoughts; that Joseph Priestley, in order to strengthen his faculties, used to write upon every subject which he wished to understand perfectly; that in republics mental vigor is increased by the frequency of general elections. In citing these miscellaneous cases with all their triviality Rush, nevertheless, has a serious purpose. It is to calculate the degrees of vigor, and the number and exility of motions
[92] which the mind is capable of receiving. It is by the exercise of the body and the collision of our intellects, by means of business and conversation, that we impart to them agreeable and durable vigor. The effects of this action and reaction, in making addition to the intellects and knowledge, lead us to admit the assertion of Condorcet that the time will come, when all the knowledge we now possess will appear to the

[15] Intellectual Faculties, p. 88.

generations that are to succeed us, as the knowledge now pos- [92]
sessed by children appears to us. . . . From what has been delivered, gentlemen, it appears that the enlargement and activity of our intellects are as much within our power as the health and movements of our bodies.[16]

This is the characteristic conclusions of an introductory lecture to the study of medicine. To judge from certain manuscript notes of one of the doctor's pupils the others resemble it in being full of wise saws and modern instances: *e. g.,* the brain is like the lower limbs, if exercised it lasts; as the body is stimulated by air, so the mind is stimulated by motives; the faculties may be compared to a well-organized government: the memory and imagination to the House of Representatives, the understanding to the Senate, in which the transactions of the House of Representatives are examined, the moral faculties to the courts of justice, the conscience to the court of appeals.[17]

The works of the Philadelphian thus far are popular and superficial. With their abundant illustrations, from classical allusions to local anecdotes, they bear out John Adams' estimate of Rush as an elegant and ingenious body, but too much of a talker to be a deep thinker.[18] But this stricture can only in a measure be passed upon the next production of Rush's middle period, the *Three Lectures upon Animal Life.* The author is here more modest in his claims, in proportion as he is more thorough in his results. He disclaims being the source of the great and original conception upon which they are founded, confessing that he has done little more than carry the hod to assist in completing a part of the fabric of which the foundations were already laid.[19] It was while a student in the University of Edinburg in 1766 that he heard Dr. Cullen deliver the opinion that the human body is not an automaton, or self-moving machine, but is kept alive and in motion by the constant action of stimuli upon it. This opinion, which Rush repeated in one of his own lectures as early as 1771,

[16] Intellectual Faculties, pp. 114, 117.
[17] Purnell MS., p. 96.
[18] Works, 2, 427.
[19] Animal Life, Preface, p. v.

[92] he now enlarges into three general propositions concerning the human body, namely: that every part of it is endowed with sensibility; that it is a unit, a simple and indivisible quality of substance; and finally, that life is the effect of certain stimuli acting upon the sensibility and excitability, which are extended in different degrees over every external and internal part of the body. These stimuli are as necessary to its existence as air is to flame. Included, moreover, in animal life are motion, sensation, and thought. These three, when united, compose perfect life. The term motion is here preferable to those of oscillation or vibration, as employed by Dr. Hartley in explaining the laws of animal life, because it is more simple and better adapted to common apprehension.[20]

To this modified materialism the American now proceeds to attach a peculiar form of realism. In opposition to the Hartleian leaning toward monism he sets a form of pluralism: man is not a machine whose parts, however complex, are homogeneous, but he is rather a number of entities acted upon by a variety of forces. Or as Rush puts it, in addition to the external stimuli like heat and light, and the internal like the action of the brain, and the pulsation of the arteries, there are the intellectual stimuli arising from the exercises of the faculties of the mind itself. Thus the imagination acts with great force upon the body, and the passions pour a constant stream upon the wheels of life.[21]

Like a good realist the author has hypostatized the faculties. Yet he does not leave them hovering in mid air as mere empty quiddities. To the mind of the materialist, thought itself is the effect of stimuli acting upon the organs of sense and motion. Furthermore, the exercises of the faculties of the mind have a wonderful influence in increasing the quantity of human life. They all act by reflection only, after having been previously excited into action by impressions made upon the body. This view of the reaction of the mind upon the body accords with the simplicity of other operations in the animal economy. Finally, common language justifies

[20] Animal Life, pp. 5-7.
[21] Ibid., p. 6.

the opinion of the stimulus of the understanding upon the [92]
brain, hence it is common to say of dull men, that they have scarcely ideas enough to keep themselves awake. And so, contrary to the picture of the Indian character drawn by Rousseau, their vacant countenances are to be attributed to the effects of the want of action in their brains from a deficiency of ideas. Again, atheism does violence to the mental faculties by robbing man of his most sublime beliefs, abstracting his thought from the most perfect of all possible objects. This is demonstrated by the theophilanthropists, who, after rejecting the true God, have instituted the worship of nature, of fortune, and of the human race.[22]

In these curious illustrations of a quantitative conception of mentality Rush's psychology threatens to degenerate into a sort of arithmetic of the mind, for beside the minus side in his table of values there is the plus. Thus the whole animal machine may be set in motion by the love of money, as was shown in the Philadelphia panic of 1791, when speculation over the scrip of the United States Bank excited febrile diseases in three of the doctor's patients. Similar mental stimuli are furnished by political conditions; many facts prove animal life to exist in a larger quantity in the enlightened and happy state of Connecticut, in which republican liberty has existed above one hundred and fifty years, than in any other country [93]
upon the surface of the globe.[23]

These strange generalizations, concerning the larger aspects of animal life, do not prevent the author from taking up the smaller phenomena, the minuter influences in the psychic life. Speaking of slight sounds which it is not necessary should excite sensation of perception, in order to their exerting a degree of stimulus, he adds: there are a hundred impressions made daily upon the body, which from habit are not followed by sensation; the stimulus of the blood upon the heart and arteries probably ceases to be felt only from the influence of habit. It is unfortunate that we forget what passed in our minds the first two or three years of our lives. Could we recollect the manner in which we acquired our first ideas, and

[22] Animal Life, pp. 19, 20, 67.
[23] Animal Life, pp. 62, 64.

[93] the progress of our knowledge with the evolution of our senses and faculties, it would relieve us from many difficulties and controversies upon this subject. Perhaps this forgetfulness by children of the origin and progress of their knowledge might be remedied by our attending more closely to the first effects of impressions, sensation, and perception upon them as discovered by their little actions, all of which probably have a meaning as determined as any of the actions of men or women.[24]

By piecing together the broken hints of his authorities, from Leibniz on minute perceptions to Reid on how the infant faculties begin to grow, Rush in a measure advances the genetic point of view. But that suggestive method is again unfortunately spoiled by a quantitative misconception. In his attempt to be precise the materialist verges toward an accurate arithmetic rather than a trustworthy psychology. In other words, the American realist, following the lead of the Scotch, has attempted to obtain a distinct and full history of the mind of the child; but the result is scarcely "a treasure of natural history." Nor is the succeeding disquisition, which seeks to establish the principle that animal life in every species depends on the same causes as in the human body. But what is of interest here is the cautious conclusion reached by the former dogmatist: From a review of what has been said of animal life in all its numerous forms and modifications, we see that it is as much an effect of impressions upon a peculiar species of matter, as sound is of the stroke of a hammer upon a bell, or music of the motion of a bow upon the strings of a violin. I exclude, therefore, the intelligent principle of Whytt, the medical mind of Stahl, the healing powers of Cullen, and the vital principle of John Hunter as much from the body, as I do an intelligent principle from air, fire, and water. . . . It is not necessary to be acquainted with the precise nature of that form of matter which is capable of producing life from impressions made upon it. It is sufficient for our purpose to know the fact. It is immaterial moreover whether this matter derive its power of being acted upon

[24] Animal Life, p. 11.

wholly from the brain, or whether it be in part inherent in [93]
animal fibers. The inferences are the same in favor of animal life being the effect of stimuli and of its being as truly mechanical as the movements of a clock from the pressure of its weights. . . . Should it be asked what is the peculiar organization of matter, which enables it to emit life, when acted upon by stimuli, I answer, I do not know.[25]

Notwithstanding his agnostic conclusion regarding man as a machine, Rush has something to say on the practical application of his doctrine to metaphysics and morality. It enables us to reject the doctrine of innate ideas, and to ascribe all our knowledge of sensible objects to impressions acting upon an innate capacity to receive ideas. Were it possible for a child to grow up to manhood without the use of any of its senses, it would not possess a single idea of a material object; and as all human knowledge is composed of simple ideas, this person would be as destitute of knowledge of every kind, as the grossest portion of vegetable or fossil matter.[26] Again, the account which has been given of animal life furnishes a striking illustration of the origin of human actions by the impressions of motives upon the will. As well might we admit an inherent principle of life in animal matter as a self-determining power in this faculty of the mind. Motives are necessary not only to constitute its freedom, but its essence; for without them there could be no more will than there could be vision without light, or hearing without sound. It is true they are often so obscure as not to be perceived, and they sometimes become insensible from habit, but the same things have been remarked in the operation of stimuli; and yet we do not on this account deny their agency in producing animal life. In thus deciding in favor of the necessity of motives to produce actions, I cannot help bearing a testimony against the gloomy misapplication of this doctrine by some modern writers. When properly understood it is calculated to produce the most comfortable views of the divine government

[25] Animal Life, pp. 73, 74, 75.
[26] Ibid., p. 78.

[93] and the most beneficial effects upon morals and human happiness.[27]

Thus far the system of Rush exhibits the three familiar marks of materialism, namely, a phenomenalistic view of substance, a sensationalistic of perception, a deterministic of volition. Now there are added certain incongruous elements. Seeking to apply his doctrine to the sphere of theology the Philadelphian embellishes it with remnants both of an earlier deism and even of that Edwardean occasionalism, which had not been obliterated when Rush was an undergraduate at Princeton. The best criterion of the truth of a philosophical opinion, he continues, is its tendency to produce exalted ideas of the Divine Being and humble views of ourselves. The doctrine of animal life which has been delivered is calculated to produce these effects in an eminent degree. It does homage to the Supreme Being as the governor of the universe, and establishes the certainty of his universal and particular providence. Admit a principle of life in the human body and we open a door for the restoration of the old Epicurean or
[94] atheistical philosophy, which supposed the world to be governed by a principle called nature, and which was believed to be inherent in every kind of matter. The doctrine I have taught cuts the sinews of this error, for by rendering the continuance of animal life, no less than its commencement, the effect of the constant operation of divine power and goodness, it leads us to believe that the whole creation is supported in the same manner.[28]

To this last observation of the last lecture on *Animal Life* Rush at some later period added a disquisition on *Liberty and Necessity.* As extracted from his unpublished *Letters and Thoughts,* and containing an erased passage of no small originality, it will bear generous quotation:

> Is it not absurd to talk of *past* or *future* when we speak of the knowledge of the Deity? Can anything be *past* or *future* to a being who exists from eternity to eternity? Are not past, present, and future to *Him*, one eternal *now?* Is not time a finite idea only, and past and future knowable only to finite beings? May

[27] Animal Life, pp. 79, 80.

[28] Animal Life, p. 81.

not the moral actions of men then have appeared as complete [94]
to the Deity at the creation as the *material* world? I see the objects of a plain before me as distinctly as if I were near it. My view of it has no influence on its form or distance; the same probably occurs to the Deity with respect to pre-existing actions. Imperfect man by *memory sees* past events—a wonderful power in a finite mind! May not a perfect being see future events in the same manner? They all have an existence in the eternal mind. *There is nothing* truly *new* in actions, any more than in truths *under the sun.* There can be no contingency with the Deity—all is fixed and immutable with Him; cause and effect, *motive* and *action*, creation and preservation, all one simple object and act. . . . The perfections of the Deity require this solution of this doctrine. *Prescience* is only a human term, but, like many others applied to the Deity in accommodation to our weak capacities. Prophecies are to Him things present; to us things to come—hence their great accuracy. It is improper and dishonorable to His glorious Oneness in existence as well as nature. It is impossible matters should be otherwise. Succession belongs only to man. God can do and know nothing in succession. So far for necessity. But all this is compatable with the most perfect liberty. The knowledge of God of actions flows from a perfect knowledge of the union between cause and effect in creation. All is still free. An artist can tell from the construction of a machine exactly its strokes, etc., without touching it after its wheels are set in motion, although he still upholds it in his hand. We still live, move and have our being in *God*. . . . Nor does this idea destroy man's responsibility. He is still free. His liberty is essential to the necessity—otherwise his action would have no moral nature and could not be the object of pardon, and for this purpose alone evil existed. It must be free to be a crime, and crimes existed, not for a display of vindictive justice in endless punishment, but for the display of love in justice in endless and and universal happiness. This removes all the fears and difficulties about moral necessity. It was necessary that man should fall—it was likewise necessary that he should be *free*, or he could not have fallen. Liberty and necessity are, therefore, both true, and both necessary to advance in due consistency all the glorious attributes of God. This union of liberty and necessity may be illustrated by a simple example: [1. I walk on the deck of a ship. Here is one free motion—the helmsman steers the ship in the direction in which I walk, and yet I am not influenced by his helm, not he by my walking; we both direct our course the same way—he, by pointing the bow of the ship, makes me keep the same course with him, but without my knowledge or his influence over my will. 2. I resolve to take a walk to an adjoining village. This is the first act of my will. On my way I forget the original

[94] act of my will and occupy it upon twenty other objects, none of which have any connection with the first. Here then is a will within a will.] I require a perfect knowledge of a man's taste in building, and then convey secretly into his hands a plan of a house. Every act of this man in building this house is foreknown by me, and yet no influence is exercised over his will. Here is necessity and liberty united.[29]

This is a reactionary document, betraying the conflict between the spirit of orthodoxy and the spirit of free inquiry. As a projected addition to the essays on *Animal Life* it explains the opposition to the revival of the ancient "atheism" and also the closing confession that the author feels as if he had waded across a rapid and dangerous stream. The figure is a good one; it exhibits Rush as conscious of the drift of his speculations. And yet in opposing his dualistic occasionalism to a monistic hylozoism, he was but vainly struggling against the tendency of materialism toward a single unitary principle,—the reduction of both mind and matter to modifications of the same common substance.

That tendency as regards anthropology, if not cosmology, is manifested in the opening passage of the next lecture *On the Utility of a Knowledge of the Faculties and Operations of the Mind to a Physician.* Man is said to be a compound of soul and body. However this language may be in religion, it is not so in medicine. He is, in the eye of a physician, a single and indivisible being, for so intimately united are his soul and body, that one cannot be moved without the other.[30] This is the doctrine of the homogeneity of man. In substituting it for his earlier dualism, Rush was undoubtedly influenced by his friend Priestley, who had read the Philadelphian's earlier lectures and called them sublimely speculative.[31] But while this supplementary lecture begins with a decided monistic turn, its force is speedily dissipated by the intrusion of pluralistic arguments,—the dividing up of an indissoluble being into separate faculties. Among these are included not only memory, imagination, and understanding, but in addi-

[29] Ridgeway MS., Letters and Thoughts, pp. 28-30.

[30] Lecture XI, 1805, p. 256.

[31] Cf. Bolton, Scientific Correspondence of Dr. Priestley, letters of Aug. 8, 1799, and Jan. 27, 1802.

tion, the principle of faith, the passions, the moral faculty, [94]
conscience, and a sense of deity.[32] Disregarding Locke's warning against supposing the faculties to stand for some real beings in the soul,[33] Rush has weakened his initial plan by the assumption that there are minds within a mind, extra agents within a single agent. Nevertheless, this complexity has its practical side. Like the modern assumption of selves split off from the self, multiple personalities within one body, it calls attention to the intimate relations subsisting between the psychical and the physical, and leads to a fruitful study of the abnormal and pathological. Or, as Rush himself puts it, a knowledge of the faculties and operations of mind furnishes many useful analogies by which we are enabled to ex- [95]
plain or illustrate the actions of the human body. Like the will and its motives, these actions do not occur without the influence of external and internal impressions, association and habit; indeed, as pathology shows, the different faculties of the mind when unduly exercised act specifically upon certain systems and parts of the body.[34] Moreover, this science of mind can be applied to abnormal as well as normal. Since the operations of the understanding act upon the brain and vary with sex, rank, profession, climate, season, time of day, they will explain morbid phenomena of the body and mind, particularly the causes of dreams, trances, phantasms, and supposed voices; all of which have been superstitiously ascribed to supernatural influence.[35] For example, unfavorable changes discovered in diseases in the morning are often the effect occasioned by the disturbing dreams of the night before; while the pain of a surgical operation is often lessened by telling the patient that the worst part of it has been performed.[36] Having touched on suggestive anæsthesia some forty years before the application of material anæsthetics in America, and having mentioned the influence of the passions in curing the diseases of the body, the lecturer now

[32] Utility, p. 257.
[33] Human Understanding, Bk. 3, chap. 21, § 6.
[34] Utility, p. 258.
[35] Ibid., p. 259.
[36] Ibid., p. 263.

[95] maintains that their efficacy is much greater in curing the diseases of the mind. To compose and regulate the passions, there are to be found means ranging from the physical influence of music to the removal of painful associations of ideas, as when a fever, caught while out gunning, was cured by removing the gun from the ill man's room.[37]

It is at this point that Rush's underlying quantitative conception of mentality again crops out. In his *Animal Life* he had spoken of the tempers and dispositions of the mind as if they were so many psychical quarts and pints. Here the faculties and their operations are presented as if they formed a parallelogram of forces, a framework of calculable energies. Thus, by opposing a new and fresh to an exhausted passion, by combining two passions against one, by giving a passion, that has operated in a retrograde course, its natural direction, madness, from the influence of the passions upon the understanding and will, has often been cured, without the aid of any other remedy.[38] Granted that this way of looking at things may appear strange, it still has its advantages. It renders the science of mind an exact science, not a chimerical and uncertain thing. While it bore the name of metaphysics, and consisted only of words without ideas, of definitions of nonentities, and of controversies about the ubiquity of spirit and space, the materiality and immateriality of mind,—it deserved no quarter from the rational part of mankind. But the science I am now speaking of is as real as any of the sciences that treat upon matter, and more certain and perfect than most of them. Note the changes and improvements that have taken place in the theories of every branch of what is called physical science within the last two thousand years. Very different is the state of phrenology, if I may be allowed to coin a word to designate a science of the mind. Most of the leading opinions and observations of Locke, Condillac, Hartley, and Reid may be found in the writings of Aristotle and Plato, and discoveries in this science are now as rare as they are in anatomy. The reason of this certainty and near approach to perfection is obvious. The mind is the same

[37] Utility, p. 267.

[38] Ibid., pp. 264-5.

now as it was in the time of those illustrious Greek philos- [95]
ophers, and of course exhibits the same phenomena in all its operations to the moderns, that it did to them. It is moreover always present with us, and always subject to our observations. It requires no excursions from home, no apparatus of instruments or agents, to develop its operations; hence there is nearly the same coincidence of opinion concerning them that there is of the qualities of bodies that act upon the senses.[39]

This is the concluding passage of the lecture of 1805. It is interesting and eloquent but at the same time disappointing. Rush's analogies sound like original discoveries and promising anticipations; but they are neither. His hints regarding suggestive therapeutics were to be traced back to the Zoönomic philosophy, his suggestions regarding the localisation of cerebral functions became involved in phrenology. The Philadelphian appears to have utilized the word a decade before Hunter applied it to the system of Gall and Spurzheim.[40] Unfortunately his use of this "history of the faculties of the human mind," as he elsewhere defined it,[41] betook of the nature of a pseudo-science. In a lecture of this period on *Dreams*, he said: whatever part of the brain is affected the dream that takes place is of that nature,—different parts of the brain being allotted to the different faculties and operations of the mind. Thus, if the moral part is affected, we dream of committing crimes, at the very thought of which we shudder when awake.[42] So, too, the closing part of the lecture defending a knowledge of the faculties is neither original nor sound. Rush confesses that he is not singular in considering such lectures as a branch of physiology, these faculties having been considered by Dr. Haller in his large work, under the title of *sensus interni*.[43] While the American, then, did service in differentiating his science of mind from speculative meta-

[39] Utility, pp. 271-2.

[40] Cf. Baldwin's Dictionary of Philosophy and Psychology, *sub verbo*.

[41] Lecture XII, on Hippocrates, p. 295.

[42] For an adverse opinion of Gall's Craniology, cf. Medical Repository, 11, 438, N. Y. 1808.

[43] Utility, p. 272.

[95] physics, yet he did not succeed in carrying it over into the safer field of psycho-physics. His method was vitiated by the obstinate misconception that reflection is the chief avenue to knowledge. Here he might be contrasted with Franklin, follower of no subjective school, but believer in any objective experiment. One can imagine what the latter would have made of Judge Hopkinson's suggestion regarding the composition of a scale of pleasurable sensations by the fingers, analogous to the musical scale, by means of objects of dif-
[96] ferent degrees of softness and smoothness.[44] Rush considered his friend's thought an ingenious one, but did not carry it into execution. For this his earlier training was to blame. For instruments of precision he preferred simple introspection. On the verge of possible discoveries realism bandaged his eyes.

Notwithstanding this preference for inward over outward observation, hints for a primitive experimental psychology are given in the ensuing lectures *Upon the Pleasures of the Senses and of the Mind.* Having described the offices of the senses, the author now intends to enumerate their pleasures, and to inquire into their causes, that is, into the changes which are produced in the nerves by the sensation of pleasure.[45] Of these two inquiries the former, as might be expected, leads to a perfect medley of facts and fancies. Among the senses of touch are given the sensation of perfect health which the Germans call self-feeling;[46] the joy of fear which the Indians experience after surviving a bloody victory; the sensation of tickling which partakes of both pain and pleasure. An illustration of the pleasures of sight is Hogarth's line of beauty which delights the eye because it consists of an unbroken curve; an instance of the pleasures of sound that of the winds, rains, and streams of water—all doing homage to the ears of man. More important than this enumeration of the pleasures of the senses, is the inquiry into the accompanying changes produced in the nerves. The fundamental proposition here is that the pleasure we enjoy from music is derived from a cer-

[44] Pleasures of the Senses, p. 409.

[45] Pleasures of the Senses, p. 399.

[46] Cf. Rush's essay on the "Manners of the German Inhabitants of Pennsylvania."

tain order and relationship of vibrations, which are excited in [96]
the ear, to each other; while the pain we feel from discord is produced by the want of order, or relationship, in the vibrations which strike the ear.[47] Rush had once decried the Hartleian theory of vibrations, here he makes a particularly unhappy application of it. Assuming that the pleasure we derive from our ears is ascribable to impressions and vibrations of a peculiar kind, and pain to an excess or dissonance of similar impressions, he states that it is from this organ that he borrows his analogies to explain the causes of pleasure and pain in all the other organs.[48] For example, the pleasure derived from contemplating a beautiful face is produced by certain harmonious motions in the retina of the eye; the pleasures of the table by a harmony in the relations of the aliments, provided, of course, that there is no mixture with indelicate toasts and bacchanalian songs; the pleasures of smell by a difference in harmony imparted to the nerves of the nose by the scale of odors. Here magnolia may be said to resemble bass, the rose tenor, the wall-flower the treble tones! In fine, all the pleasures of the senses being produced from greater or less degrees of harmony analogous to the vibration of musical sound, our bodies may be compared to a violin; the senses are its strings; everything beautiful and sublime in nature and art is its bow; the Creator is the hand that moves it; and pleasure, nearly constant pleasure, their necessary effect![49]

To these ridiculous analogies the other materialists made more or less direct answer. Buchanan, of Kentucky, protested against turning the human system into a violin; Cooper, of South Carolina, ironically mixed a sort of vibratory punch in which the spirits and the lemon were blended in harmonious proportions. But aside from Rush's figures of speech, attributable to the pedagogue's propensity to make matters clear to the meanest intelligence, the lecture on the *Pleasures of the Senses* contained a number of valuable observations, summed up in the form of laws of sensation.

[47] Pleasures of the Senses, p. 428.
[48] Ibid., p. 432.
[49] Pleasures of the Senses, pp. 424-5.

[96] Such were the statements that some pleasures are increased, others lessened by repetition; that motion in the organ increases the sensitivity of touch; that the loss of the use of one sense often increases the pleasures of another, the blind enjoying music more than those who possess their eyesight; finally, that we are able to receive only a single sensation in our minds at once, the impressions of yellow and blue, for example, exciting the green color.[50] These laws, for one thing, lead Rush to disagree with the theory of Edmund Burke, presented in his treatise on the *Sublime and Beautiful,* that relaxation is so extensive a source of pleasurable sensations. Rather should one conclude that motions of a moderate degree of force, and in regular order, constitute pleasure; and that motions in excess, and out of order, constitute pain.[51] Or, to use an obvious simile, pleasure may be compared to a clear stream of water flowing with rapidity through a straight and narrow channel; pain to the same stream rendered turbid by flowing with accumulated velocity and in every possible direction.[52]

Rush's laws of sensation appear the more safe as they are the less specific. When freed from such latent metaphors as the senses being so untuned by diseases as to emit no tones of pleasure, they stand as suggestive contributions to current knowledge. Such are the closing remarks that the pleasures of the senses are of short duration; that they are of limited nature as to their degree—no ingenuity being ever able to raise them so high as to perfectly satisfy the mind; finally, that they are so nearly related to pain that they often terminate in it. In the last of these summary negations the materialist has well nigh formulated a law of diminishing return applicable to the psychical field. But herein his first aim is apparently not so much to uphold exact science as practical piety. He means to show that numerous and delightful as are the pleasures of the senses, they have their alloy, and yet that, in these evils, heaven is still kind,—since we are taught by them

[50] Pleasures of the Senses, pp. 425-6.
[51] Ibid., p. 432.
[52] Ibid., p. 428.

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to aspire to more sublime and durable pleasures of the mind, [96]
the subject of the next lecture.[53]

In this supplementary treatise the author pursues the same order as before. He enumerates the pleasures of each of the [97]
faculties; inquires into their proximate cause; and concludes with some general remarks. As another introductory lecture the subject must be made interesting at all hazards. So, under the first of these topics there appears the customary mixture of rhetoric and anecdote. By the memory we command, as it were, the suns that have gone down to rise again; by the understanding we gain the most delicate and sublime pleasures. The nature of this may be conceived from the fact that Mr. Rittenhouse fainted upon perceiving the transit of Venus on the third of July, 1760. Again, the pleasures of the association of ideas are so peculiar a nature that an old African slave, who saw a lion conducted as a show through New Jersey, was transported with joy, being carried back to the days of his boyhood in his native country.

Having pointed his moral with provincial tales, and brought the subject down to his hearers, Rush returns to his original quest,—the higher hedonism of intellectual pursuits. Here he emphasizes the pleasures of the will as consisting in contemplating the mysterious union of free agency and necessity in all its operations. We are barely pleased with what we understand; but the exercise of admiration is necessary to our intellectual happiness, and this can be employed only upon subjects which are removed beyond our comprehension. While we thus contemplate, with a delightful wonder, the union of free agency and necessity, we derive pleasure from a sense of each of their respective operations. The pleasure we enjoy in free agency is felt in the sacrifices that we make for the attainment of liberty and in reflecting that we are masters of ourselves. The pleasure we enjoy in a belief in the will acting from necessity is in disposing us to view the hearts of all the men that move our world by their powers or their talents, as under the direction of a wise and good being; and it assures us that all the events that relate to our indi-

[53] Pleasures of the Senses, p. 436.

[97] vidual happiness, whether from moral or physical causes, are in his hands and that his hand is in every event. I am aware that I dissent from two popular and rigid sects of philosophers and divines, in thus admitting the truth of the opinions held by each of them. But an exclusive belief in either of them, so far from being attended with pleasure, is calculated to excite misery and despair. I repeat, therefore, what I said formerly in speaking of the operations of the will, that both opinions appear to me to be alike true; and that we act most freely when we act most necessarily, and most necessarily when we act most freely.[54]

Here are the paralogisms of the pure reason considered not as mutually exclusive but as actually complementary. And nothing could better exemplify Rush's habit of looking on both sides of the shield at once. The only ground and justification for reaching such a cross-eyed conclusion lay in his private paper on *Liberty and Necessity*. But this, as previous inspection showed, left the matter decidedly undecided, the best argument being a suppressed simile. Equally unsatisfactory is the author's treatment of the problem of personality, incidentally subsumed under the pleasures of consciousness. Identity, it is asserted, may be conceived of from a single fact. There never was a man who was willing to change his own mind for that of any other person, however willing he might be to exchange his condition, limbs, and face with him.[55] In thus generalizing from a single instance Rush seems to ignore the perversions of consciousness. It was apparently not until later that he met with the anomaly of double personality in the reputed two minds of the somnambulist. This one-sidedness is exceptional, for in treating of his favorite faculty, the moral sense, Rush takes a broader outlook and includes both the extreme and abnormal manifestations of this activity. He holds that the intensity of the pleasures derived from this source is so great, that it may destroy bodily pain,—as in the case of the primitive martyrs to Christianity, who had joys even in the flames of fire. And the perversions

[54] Pleasures of the Mind, pp. 441-3.
[55] Pleasures of the Mind, p. 449.

of the same faculty are so remarkable that it may become a [97]
veritable idiosyncrasy,—as in the case of the Parisian in the reign of Robespierre, who declared that the most delightful music he ever heard was the sound of the guillotine.[56]

Having enumerated the pleasures of the mind and some of their perversions, the author comes to his second inquiry—their proximate cause. This may be summed up in a few words. They are the effects of impressions of a certain definite or moderate degree of force, accompanied with motions of a regular or harmonious nature in the brain and heart and communicated by them to the mind. This is to be inferred from dissections, which discover marks of undue or irregular excitement in the brain and of rupture or disorganization in the heart, where death has been the consequence of an excess of intellectual or moral pleasure.[57] In his extreme zeal for palpable results the materialist has assumed a cause too great for its effects. His contention, however, may serve as a fitting transition to his last and most extended work of philosophic interest, the *Medical Inquiries and Observations upon the Diseases of the Mind.* Published in 1812, at the solicitation of the author's pupils, this volume is said to be a supplement to materials already collected, a set of new principles founded upon old facts.[58] Unfortunately for his claims to originality Rush neglects to refer to the books from which he drew these facts. Then, too, he repeats many of his former borrowings. Again are the faculties lengthily enumerated, and a special plea made for the sense of deity according to Lord Kames; again are they defined, in the manner of Haller, as internal senses, depending wholly upon bodily impressions to produce them. Indeed, it said after the fashion of Locke, as well might we attempt to excite thought in a piece of marble by striking it with the hand, as expect to produce a single operation of the mind in a person deprived of the external senses.[59] With these resemblances to former doctrines there yet goes a difference; there

[56] Pleasures of the Mind, p. 445.
[57] Ibid., p. 452.
[58] Observations, Preface, p. v.
[60] Ibid., p. 11

[97] is a similar combination of realism and sensationalism, but
[98] the materialism is slightly modified. The Hartleian figures of speech are dropped and a safer generalization adopted. No longer is the body compared to a musical instrument, or the senses spoken of as untuned by diseases so as to emit no tones of pleasure. Refusing then, like Priestley and like his own colleague Frederick Beasley, of the University of Pennsylvania, to commit himself to any specific theory of vibrations, Rush carries out his previous implications in the following postulate: all the operations in the mind are the effects of motions previously excited in the brain, and every idea and thought appears to depend upon a motion peculiar to itself. In a sound state of the mind these motions are regular, and succeed impressions upon the brain with the same certainty and uniformity that perceptions succeed impressions upon the sense in their sound state.[60] Except for an unwarranted assumption of the priority of the physical over the psychical, Rush's thesis might almost be counted a rough formulation of the theory of psycho-physical paralellism. At the least it is a practical working hypothesis, or, as he puts it, a system of principles that shall lead to general success in the treatment of the diseases of the mind.[61]

Having considered the faculties and operations of the mind, it is in order to inquire into the proximate cause of intellectual derangement. Here the American alienist reviews the erroneous opinions on this subject from the ancient notion that the liver is the seat of the trouble, to the modern belief in favor of madness being an ideal disease. The former theory Rush had met in his lecture on the *Opinions and Modes of Practice of Hippocrates;* the latter, as to madness being purely psychical, he objects to for three reasons: first, because the mind is incapable of any operations independently of impressions communicated to it through the medium of the body; second, because there are but two instances upon record of the brain being found free from morbid appearances in persons who have died of madness; third, because there are no instances of primary affections of the mind, such as grief,

[60] Observations, p. 11.
[61] Ibid., Preface, p. vi.

love, anger, or despair, producing madness until they had [198]
induced some obvious changes in the body.[62]

In this same thorough manner the doctor next examines the remote and exciting causes of intellectual derangement. Briefly put, these are of two classes: first, those that act directly upon the body, as malconformations and lesions of the brain; second, those that act indirectly upon the body through the medium of the mind, as intense study over the means of discovering perpetual motion, or even researches into the meaning of certain biblical prophecies.[63] In the ten score pages following this preliminary section, Rush presents what he calls a new nomenclature of mental diseases, from tristimania to manalgia,—a cobweb of technicalities as involved as the Zoönomic classification. Occasionally the author presents clear and illuminating psychological observations, as in his definition of demence as consisting, not of false perceptions, but of an association of unrelated perceptions, wherein the mind may be considered as floating in a balloon, and at the mercy of every object and thought that acts upon it.[64] But in general, Rush in this part of his work has been pronounced often discursive and sometimes inconsequential, with a tendency to expand and multiply rather than to condense and critically classify.[65] The last reference is especially applicable to the earlier articles on the *Different Species of Phobia and Mania.* Among the former are instanced the cat-phobia and the solo-phobia, the phobia being excellently defined as a fear of an imaginary evil, or an undue fear of a real one. Among the latter are described the land-mania which is especially prevalent in the United States; and liberty-mania which shows itself in visionary ideas of liberty and government,—when men expect liberty without law, government without power, sovereignty without a head, and wars without expense.[66]

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[62] Observations, p. 16.

[63] Ibid., pp. 30-37.

[64] Observations, p. 257.

[65] C. K. Mills, Benjamin Rush and American Psychiatry, Medico-Legal Journal, Dec., 1886, p. 34.

[66] Columbian Magazine, 1786-7, pp. 110-113, 177-180, 182-187, 305.

[98] In these statements the American exhibits all the fanciful ingenuity of the modern French alienists with their movable arrangements of fixed ideas. But he has more solid parts and in his chapter on the derangement of the will is declared to have led his generation and forecasted the later work of Ribot.[67] This estimate seems exaggerated. Rush enumerates but two ways in which the will is affected by diseases, one of which is treated too superficially, and the other too metaphysically. There is first a negative affection, aboulia, or what he would call a debility and torpor, or loss of all sensibility to the stimulus of motives. In this he says he has never been consulted, yet he has been informed by his friend Brissot that animal magnetism will cure light cases. He suggests, however, that persons afflicted with this disorder of the mind should be placed in situations, in which they will be compelled to use their wills, in order to escape some great and pressing evil. A palsy of the limbs has been cured by the cry of fire and a dread of being burned. Why should not a palsy of the will be cured in a similar manner?[68] But to proceed: there is, second, a privative affection of the will, when it acts without a motive, by a kind of involuntary power. Rush is here at pains to set forth the two opinions that have divided philosophers upon the subject of the operations of the will and to grant that freedom is as true as necessity. But in spite of his effort to reach a perfect metaphysical impartiality he finds himself on the necessitarian side of the fence. That derangement of the will in which it acts without a motive, by a kind of involuntary power, is exactly the same thing that occurs when the arm or foot is moved convulsively without an act of the will, or even in spite of it.[69]

[99] Such notions of the diseases of the will as affecting the moral faculty had at the least a practical value in Rush's ideas of medical jurisprudence; his corresponding notions of the disease affecting the believing faculty has not even a theoretical worth. Assuming a realistic principle of faith he uses it, first, as a peg upon which to hang more anecdotes,

[67] Mills, op. cit., p. 10.

[68] Diseases of the Mind, pp. 268-270.

[69] Ibid., p. 263.

then, as a club to throw at the idealists. Defining his favorite [99]
faculty as that principle in the mind by which we believe in the evidence of the senses, of reason, and of human testimony, he gives as an instance of its excess an old Revolutionary quidnunc who, like Horace's character of Apella, believed everything he heard; and as an instance of its deficiency Burke's description of those who "believe nothing that they do not see, or hear, or measure with a twelve-inch rule." This incredulity, adds Rush, is not confined to human testimony. It extends to the evidence of reason and of the senses. The followers of Berkeley either felt or affected the last grade of this disorder in the principle of faith. That it is often affected, I infer from persons who deny their belief in the utility of medicine, as practiced by regular-bred physicians, but believe implicitly in quacks.[70] Since it affects both his preaching as a realist and his practice as a materialist, the Scotch-trained doctor now offers a sort of logical prescription for this insanity of doubt. The cure for a weak mental digestion is to go back to a plain intellectual diet,—or as he puts it: the remedy for this palsy of the believing faculty, should consist in proposing propositions of the most simple nature to the mind, and after gaining assent to them, to rise to propositions of a more difficult nature.[71]

In the succeeding chapter on derangement in the memory there is presented a dry catalogue of the various forms of this disease. Lacking a technical nomenclature, it nevertheless contains implicit recognition of the various forms of amnesia. Among those given is an oblivion of names and vocables, of the sound of words but not of the letters which compose them, of the qualities or numbers of the most familiar objects, of events, time, and place. Instances of these lapses in the memory are forthwith presented,—from Rush's own friends to his patients in the Philadelphia hospital,—from the absent-minded Dr. Magaw of the university, to an Italian victim of the yellow fever, who in the beginning of his malady spoke only English, in the middle only French, and on the day of

[70] Diseases of the Mind, pp. 276-7.
[71] Ibid., p. 274.

[99] his death only the language of his native country.[72] Rush here obtained an insight into retrogressive amnesia, yet in treating of the results of the weakness and loss of memory he is even more superficial than before. He resorts to the once-rejected scholastic realism, speaking of the objects of knowledge as either sleeping or perishing in the mind. Finally, he gives a most inadequate account of the causes of these things. Among mental causes he mentions the oppressing the memory in early life with words and studies disproportioned to its strength, as prematurely crowding Latin and Greek into boys' minds; and also the undue exercise of memory upon any one subject, as in the case of the negro calculator, Thomas Fuller, of Virginia, who was famous in numbers, but could not recollect faces.[73]

The chapter on dreams and somnambulism is an equally hasty performance, yet may be happily supplemented from other sources. Dreaming is here said to be always induced by irregular or morbid action in the blood-vessels of the brain, hence it is accompanied with the same erroneous train, or the same incoherence of thought which takes place in delirium. This is so much the case that a dream may be considered as a transient paroxysm of delirium, and delirium as a permanent dream.[74] Again, somnambulism is nothing but a higher grade of the same disease. It is a transient paroxysm of madness. Like madness it is accompanied with muscular action, with incoherent or coherent conduct, and with that complete oblivion of both which takes place in the worst grade of madness. Coherence of conduct discovers itself in persons, who are afflicted with it, undertaking or resuming certain habitual exercises or employments. Thus, we read of the scholar resuming his studies, the poet his pen, and the artisan his labors, while under its influence, with their usual industry, taste, and correctness.[75] As a foil to these dogmatic definitions and unqualified assertions, Rush on other occasions made a num-

[72] Diseases of the Mind, p. 276. Cf. W. B. Carpenter, Principles of Mental Physiology, London, 1879, p. 437.

[73] Diseases of the Mind, pp. 281-2.

[74] Ibid., pp. 300-1.

[75] Ibid., p. 304.

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ber of additions and conjectures. Suggesting that dreams [99]
are useful to prognosticate incipient diseases and to prevent delirium from too great excitability, he goes on to say that we never dream of things the raw material of which did not exist in the mind previously. So dormant or lost ideas are often revived in dreams and recollected afterwards. The fact that I remembered the name of a forgotten classmate of the Jersey college after a dream proves, not that such a recollection was a preternatural occurrence, but simply that nothing exists in the brain but that which had previously entered through the medium of the senses.[76]

As Rush's sensationalism rescued him from a magical conception of the phenomena of dreaming, so did his materialism from a similar view of the phenomena of somnambulism. Here is given, in a remarkable anticipation of later French discoveries, a case of continuous memory in trances, of patching up recollections into an unbroken secondary series. Somnambulists, he reasons, recollect in each fit what they did in the preceding one, as in the case reported by Dr. Lentwork, [?] of Springfield, to the Reverend Dr. Stiles, of Yale. They appear to have two distinct minds, but may this not be owing to impressions made on the other parts of the brain by diseases and re-excited by the same stimulus?[77] It must be granted that Rush has here ingeniously approached the problem of dual personality, previously ignored, by a sort of anticipated nerve-tract theory. In his next topic he is not so modern. He defines an illu- [100]
sion as a sort of waking dream, a disease in which false perceptions take place in the eyes and ears from a morbid affection of the brain. The deception consists most commonly in hearing our own names, for the reason that we are accustomed to hear them pronounced more frequently than any other words. Hence, that part of the ear which vibrates with the sound of our names moves more promptly, from habit, than any other part of it.[78] This naturalistic explanation is put forward against the beliefs of superstitious people, who say

[76] Purnell MS., p. 128.
[77] Ibid., p. 133.
[78] Diseases of the Mind, p. 307.

[100] that these false perceptions are premonitions of death. Yet the author is careful to add that it may not be applied to invalidate the accounts of the supernatural voices and objects that were seen or heard by individuals in the Old and New Testaments.[79]

Allowing no conflict between his science and his religion, Rush offers in his final chapter on the *Diseases of the Mind* a plea for what he calls a system of Christian jurisprudence. Though based on a cramped and narrow psychology, it was given a broad and fruitful application. The disease of the will, it is assumed, discovers itself only in the moral faculty and exists with a sound state of the conscience and sense of the deity. Hence, as the lecturer had previously declared, it would be as absurd to inflict the punishment of death upon a fellow creature for taking away a life under a deranged state of the will, as for a surgeon to cut off an arm or a leg because in its convulsive motions it injured a toilet or overset a tea table.[80] Now, while these morbid operations of the will may include in their consequences even theft and murder, yet they are to be considered, not as vices, but as symptoms of a disease. Therefore, for persons thus afflicted legislators should abolish the punishment of death, cropping, branding, and public whipping, and substitute for them confinement, labor, simple diet, cleanliness, and affectionate treatment. As is shown by the moral effects thus produced in the jail of Philadelphia, the reformation of criminals and the prevention of crimes can be better effected by living than by dead examples![81]

This semi-political peroration concludes the last of Rush's philosophizings. Contrasted with the first, the undergraduate transcription of scholasticism, it illustrates his saying that it was time to take science out of the hands of philosophers and put it into the hands of the people.[82] Here is a principle much in the spirit of Franklin. Applied as a cri-

[79] Diseases of the Mind, p. 308.

[80] Medical Jurisprudence, p. 388.

[81] Diseases of the Mind, pp. 365-6.

[82] A. E. B. Woodward, "A System of Universal Science," p. 239, Philadelphia, 1816.

terion to Rush's own works, it shows him to be a popularizer [100]
rather than a speculator, an advocate of concrete results rather than of abstract consistency. So, however much Rush accomplished as a practical reformer, the natural and inevitable outcome of such a principle was to make his metaphysics a thing of inconsistencies. As a transitional thinker he strives to be so impartial that he takes both sides at once. His "cold common sense" is offset by a phenomenalism in which "ideas are mere qualities, having no more reality than the sound of a hammer or a bell." [83] So, too, the principle of animal life, excitability, is allowed in one place to be either a quality or a substance; [84] in another it is looked upon as a sort of vital phlogiston, which was to be drawn off from animal matter as freely as Rush himself drew blood from his patients.[85] Again, while diseases of the mind are counted as veritable derangements of a constituted order, real evils in this present world, still it is likewise held that "all evil has wisdom in it, and every folly and vice, like every particle of matter, is necessary." [86]

In fine, if these scattered inconsistencies be fitted into the divisions of epistemology, ontology, and cosmology, Rush's system is found to issue in a mutual cancellation of terms. That this was due to the varying influences of conflicting schools of thought—realism, materialism, and an obsolescent deism—becomes evident in a criticism of his main field of endeavor. Rush's psychology was vitiated by a kind of realistic phrenology, in which imaginary faculties are immured in so many water-tight compartments. Now such a confinement within arbitrary limits had a two-fold defect: it prevented the attainment of a correct view of precise cerebral localization, and of the general activity of the brain in the higher thought processes. Rush is again but half right in his genetic methods. He recognizes the growth of the child mind, and attempts to map out the steps in its mental development; but he fails to see that the decline of the intellectual powers occurs

[83] Purnell MS., p. 90.
[84] Animal Life, p. 6.
[85] Cf. Utility of a Knowledge, etc., p. 258.
[86] Purnell MS., p. 90.

[100] in an order the reverse of that of their acquirement. The doctrine of retrogression, which he touched upon in his mature essay on *Old Age* is twisted by an earlier deistic bias. Giving the order in which the mind declines as first the memory, then the imagination and understanding, he adds, that the sense of the Deity is never forgotten.[87] A lost memory which never forgets something is a cause for astonishment, and yet despite this and his other defects Rush was no more inconsistent than those upon whom he drew. Like the Zoönomic philosopher he put in the same basket fragile innate faculties and lively vital movements. Like Hartley he added teleological trimmings to a doctrine of philosophical necessity: nothing was made in vain; every power, principle, and feeling of the body and mind must answer to the end of their creation.[88] For these things, Rush, as a transitional writer, was hardly to blame. Struggling in the stream of conflicting currents, he was indeed in a poor position to estimate their relative forces. In other words, the times were against him. Historically, he was not so placed as to obtain the right perspective. No more
[101] than his masters could he be aware of the fact that his realism was a drawing away from his materialism, just as his materialism was from his deism.

Rush's system was a syncretism, a mode in which varied movements were fused. It was, therefore, capable of a variety of interpretations. These it received at the hands of both contemporaries and followers. An anonymous London deist wrote that when it was said that medical men were enemies to the religious view, Dr. Rush was an example to the contrary.[89] So, too, a Philadelphia admirer attributed to Rush the statement that it remains yet to be discovered, whether all the moral, as well as natural attributes of the Deity may not be discovered in the form and economy of the material world.[90] And the same author, in his *Eulogium,* recalling Rush's meth-

[87] Purnell MS., p. 96.

[88] Thoughts, MS., p. 47.

[89] An Interpretation of the Sacred Scriptures, p. 11, London. 1797.

[90] David Ramsay, Eulogium . . . of David Rittenhouse, p. 27, Philadelphia, 1796.

ods of teaching, said that he urged his students to the study [101]
of the anatomy of the human mind, commonly called metaphysics, since the reciprocal influence of the body and mind upon each other can only be ascertained by an accurate knowledge of the faculties of the mind and their various modes of combination and action. To this end they should study Butler, Locke, Reid, Beattie, and Hartley.[91]

Interpreted, then, both as a realist and a deist, Rush was yet in the main a materialist. His followers and imitators at home and abroad show this. His own pupils outdid him in the application of the physical principle. One wrote on the effects of the passions on the body;[92] another on the morbid effects of grief and fear;[93] a third made voluntary motion the effect of irritability;[94] a fourth defined volition as a sensorial power secreted in the substance of the voluntary muscles.[95] These opinions were expressed in the inaugural theses of the doctor's students at Philadelphia. A similar use of his name and opinions is to be found in the theses of the early American students in Edinburg.[96] The contents of these treatises may be as dull as their latinity is indifferent, nevertheless, they are of interest in that while some of them refer to Hartley and Darwin, Franklin and Priestley, all of them refer to Rush and thus go to prove that as head of the Philadelphia school of materialists he was of no small influence. That influence, it should be noted in conclusion, was chiefly exerted in the Southern States. From them came the great majority of Rush's pupils, and if to them be added open-minded thinkers, who, like Jefferson, Cooper, and Buchanan, knew either Rush or his works, the South may be looked upon as the most promising field for the spread of materialism. But why that movement failed to flourish there, and how it was

[91] Eulogium, p. 124.

[92] Henry Rose (Va.), 1794.

[93] William Hall (S. C.), 1812.

[94] John Hart (N. C.), 1806.

[95] Robert Mayo (Va.), 1808.

[96] Such as C. Berkeley (Va.), 1793, De Corpore Humano; R. B. Screben (S. C.), 1799, De Vitae Humanae Gradibus, in the William Osler Collection, in the Medical and Chirurgical Faculty Library, Baltimore.

[101] rooted out, is another story, connected with the interplay of conflicting forces. But before taking up the important topic of the decline of the English and French materialistic influences, through the rise of natural realism, or the philosophy of common sense, consideration must be given, for the sake of thoroughness, to the case of the minor materialists.

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