and incapable, of course, of being injected ; it is as a foreign body in the midst of the living solid, and there is a constant disposition, in that solid, to effect its solution and discharge from the body.

Bayle has described an appearance in the lungs which he has designated by the term *granulations* ; he observes : " The lungs are studded (' *farcis*,' whence the term used by veterinarians) with miliary, shining, transparent granulations, sometimes marked with brilliant, black points or lines. These granulations appear of the nature and consistence of cartilage ; their size varies from that of a millet seed to that of a grain of wheat ; they are never opaque, and do not soften. By these characters they are distinguished from miliary tubercles, which have the same magnitude, but are always grey or white, and opaque, and which eventually soften completely.

Laennec is of opinion that these granulations are the first stage of tubercle. M. Louis is of the same opinion. M. Andral, on the contrary, contends that they are merely inflamed portions of the pulmonary lobules. We shall advert to this subject hereafter.

Tubercle appears to be a morbid *secretion*. Its size augments by the addition of fresh particles of the same kind. It at the first infiltrates the texture in which it is found ; afterwards it becomes isolated from that texture, except in the case of diffused infiltration. It then becomes infiltrated itself, *softened*, and transformed into a puriform fluid. It acts as a thorn or other foreign body, inducing the secretion of pus in the textures by which it is contained. Eventually, like such other foreign body, it is, if possible, removed from the economy. It then leaves a cavity, an *ulcer*, which, in rare instances, contracts and cicatrizes.

Ordinary tubercles contain about ninety-eight parts of animal, and two parts of saline, matter, viz., the muriate of soda, and the phosphate and carbonate of lime. In some cases they undergo a *calculous* transformation, and they then consist of three parts of animal, and ninety-seven parts of saline, matter. This calculous transformation is observed in the lungs, in the mesenteric glands, &c. It is opposed to softening.

Tubercles are principally developed in the cellular membrane of organs. They may be sub-mucous, sub-serous, intra-muscular ; they may occur in the substance of the cerebrum and cerebellum, the liver, the spleen, the kidney, the testis, the absorbent glands, the bones, &c. Tubercle has been seen on the surface of mucous membrane, free from ulceration ; in the mucous follicles ; and in the lymphatic vessels ; in these, and some other cases, it is obvious that other textures beside the cellular membrane, had poured out tuberculous matter.

[To be continued.]

ON EMPIRICISM, AND A CASE OF HYDROTHORAX, WITH OSSIFICATION OF THE AORTA.

[Communicated for the Boston Medical and Surgical Journal.]

THAT in this enlightened age, and in this our well-educated part of the world, we should find whole families *infidels* as to regular-bred physi-

cians, and firm believers in empiricism and empirical poisons, is one of those anomalies least to be looked for, but yet to be found. There is still in the world the *great* vulgar, who ought long ago to have soared above the *little* vulgar, who, strangely reckless of their own health, have ever pestered the medical profession. But we find the former still treading the same murky and marshy path, without mounting the road of life, that is well paved, well lighted, and void of the poisonous exhalations of the shores of the dead sea. The notion that no systematic course of medicine is to be pursued, but that a single prescription, of pill or powder, is to remove all the *ills that flesh is heir to*, and that at once, is one of the absurdities which at present prevails. As well might the farmer adopt a like hasty notion, and dig up his seed at the end of the day, or the week, because it had not produced a crop. They remind us of the child who cries for its apple to be roasted and cooled before it has been long enough at the fire to be warmed.

There is certainly a deficiency or falsity of education among us, which calls for a philosophic, systematic, and energetic amendment. The managers of the public press, who very properly exclude an advertisement of the intoxicating potation, and of the infidel publication, admit whole columns recommending nostrums, catholicons, panaceas, and all kinds of quack medicines; the general reading of which tends to derange the public mind and lead it astray from science, biasing it to place a reliance, when sickness shall weaken the reasoning powers, upon inert or pernicious drugs and compounds—and having, likewise, the immoral tendency of teaching the reader that miraculous powers reside in the manufacturing doctor or his vaunted specific, when it is in fact pernicious or inert. There is such an intimate connection between the mind and body, that if the one is unsound the other is not healthy.

We view infidelity in the regular-bred and scientific physician, as pernicious to health, as is the lack of faith to morals. The foundation of a belief in nostrums is fallacious and immoral, as conflicting with the great order of events, and the whole plan of creation. It is an evil wide spread, overwhelming and monstrous, for which the community is more culpable than the quacks. It assumes the principle that health can be retained without care, sickness removed without science, and remedies prove efficient without any kind of adaptation to the case.

We were led into this train of reflections by the death of a valuable citizen, Mr. H., who with his family were everything in society that he and they ought to have been, except a reliance upon quack doctors and their trash, in cases of sickness. Mr. H., for more than two years, had been subject to falling suddenly down, in apparent syncope, or asphyxia; during which time he had no regular medical attendant, nor no systematic mode of treatment. Some remedies were used, but were soon changed for others, as fancy dictated, or as his family or friends advised, so that when he became my patient I could obtain but little knowledge of his previous medication. Nor was I able to carry my plan of treatment into regular system; for a newspaper nostrum, or a friendly prescription, from one who was not a physician, was pretty sure to have a trial. Nor could my remonstrances overcome the versa-

tility of my patient, and especially of his wife, who was an unbeliever in all regular-bred physicians, with a strange prejudice against some of their most innocent medicines.

Although the diagnosis in this case was not very clear, I was satisfied that Mr. H. had water in his chest. And yet he had no difficulty of breathing, except in those fits of syncope already noticed, which were not frequent, but at very distant intervals. These paroxysms, by the best information I could obtain, bore a strong resemblance to *sternalgia*, the *angina pectoris* of Heberden. At other times his appearance did not indicate any kind of ill health. His pulse was natural, except that in one wrist it was uniformly smaller than in the other; from which I inferred a fatal termination, having never known a case of final recovery in any disease, or even accident, when this state of pulse permanently existed. It denotes an organic affection of the heart or lungs, or both. At least such seems to me to be the pathology. One of the prescriptions for Mr. H. was as follows. R. *Baccæ junip.*, *polygala seneka*, āā ℥ iii.; *scilla mar.*, ℥ iij.; boil in four quarts of water to two quarts; strain and add sp. nit. dul., ℥ iv. Dose, a wine glass full three times a day. But spirits of nitre happening to have been mentioned in the patient's hearing, he refused to take it if combined with that article. This was on account of the prejudice of his wife against *sal nitre*. This she alleged he had taken some ten or twelve years before, and that it had so cooled him that he had never got over it! It is thus that we sometimes find persons of good sense so prejudiced against a harmless remedy as to refuse it, even when they know that their lives are in danger from their disease. A substitute was made for nitric ether, but the amount of the dose prescribed was never complied with.

Is it not one of the traits of character of liberty and independence, for patients not to be bound by the directions of their medical advisers? We sometimes hear of our land being a *land* of liberty, from those who are strictly enjoined to follow our prescriptions. And hence they take the liberty not to comply. Mr. H. was a wealthy farmer, and from choice pursued his vocation with assiduity; and like Cincinnatus, withheld not his own hand. Although it was at an advanced period of his disease that he put himself under the care of the writer, yet he was not restrained by his advice from twice a day milking five of his thirty cows with his own hands, as he had done formerly. He also went to mill himself in the cold of autumn and beginning of winter, to have provender prepared for his fattening beeves, a distance of three miles. He came to me for his medicine and advice, and I was never called on to make him a single visit, except on the day of his death. The day before this event (December 17th) was a cold day, yet he came to my house alone, a distance of a mile and a half, in his carriage, and drove a spirited horse. He conversed, at this his last visit, with spirit and cheerfulness, with no external appearance of deviation from health. His lower extremities had slightly bloated previous to this, but the œdema had entirely disappeared. Still there remained a smaller pulse in the right wrist than in the left, as though the artery had a diminished calibre. Had it not been for this, I should have had hopes of his recovery. I

may here remark that, after he put himself under my care, he never had any of his fits of falling down in asphyxia. This I attributed, whether correctly or not, to a preparation of Peruvian balsam, ether vitriol, and oil of the root of sassafras; a preparation which, with us, has had an admirable effect in palpitation of the heart and other affections of that organ.

December 18. I was called in haste, and found Mr. H. in *articulo mortis*. It was in the afternoon of that day. This was somewhat unexpected, as in my own experience I had found, in cases of hydrothorax, that the lower extremities became œdematous before the closing catastrophe. But this case was an exception. I was informed by Mrs. H., that at four o'clock that morning he arose to the urinal, at which instant he complained of his head; that he lay down with a short and rattling respiration, and soon began to cough, sweat and expectorate; neither of which symptoms had he ever before experienced. And the reader may well conceive that had I not known the family peculiarities, I should have felt surprise at the omission of calling in medical aid until the afternoon, for these symptoms had continued unabated until my arrival, with slight occasional interruptions of mentality also.

The sweating was astonishingly profuse. It had not only entirely wet the patient's dress, but the bed clothes, for nearly half a yard on each side of him, were drenched. He had vomited several times, an occurrence which had never before taken place during his illness. All these new features of the disease passed with the wife for one of the former fainting fits of Mr. H., although entirely different. Nor was I credited by her when I announced his dissolution at hand. At four o'clock Mr. H. wished to be raised up in bed, as he said, to bend forward. He was raised, and bent himself forward, when his head fell on his breast, and he was laid down and immediately expired.

Permission to examine the body was requested, and obtained without any very great difficulty. A son-in-law (Judge W.) was present, a man of liberal sentiments, to whose aid I was much indebted in obtaining the family consent to examine the body. A regard to science seems, in this respect, to be increasing in the world. Two, at least, of the kings of England, George II. and George IV., were examined after death. We know not whether the practice has been general, and extended to others of the royal family, or not. We have seen the report of Dr. Frank Nichols, physician to George II., of the *post-mortem* appearances which the body of that monarch exhibited. It was a singular case. His heart had burst! and there was a hole quite through it, continuous with one of the ventricles.

Post-mortem inspection of Mr. H., aged 69.—To the eye, the external contour of the body exhibited no signs of previous disease, there being neither emaciation, discoloration, nor intumescence. The examination was begun about two and a half hours after death. In presence of two of my brethren of the faculty, I made an incision down the middle of the sternum, and then dissected back all the integuments on each side, to where the ribs join that bone. The junction of the ribs with the sternum was then separated with the knife, and that bone turned up-

wards, so as to expose the thoracic viscera. A slight lesion of an intercostal muscle on the right side of the breast-bone, brought water to light, which began to flow, and of which that cavity was found completely full. The dissection was here suspended for the purpose of dipping the water out into vessels, that it might be measured. Seven pints and three fourths of a pint were accurately measured, the right and left cavities included. But of this quantity six pints were contained in the right cavity. The quantity lost, or not included, was judged to be upwards of a pint and a half, so that the whole contents of transparent liquid in the thorax was a little more than *nine pints*. Upon resuming the dissection, the root of the aorta was found ossified, and the semilunar valves obliterated. They probably helped to form the bony mass, but there were no traces of their shape. The ossification was a bony ring, where the aorta sprang from the heart. But the orifice through this ring was as large as that of a common aorta in adults; though not near as large as was the aorta in this subject, above the ossified ring, where this vessel was, by actual measurement, considerably over an inch in diameter, and consequently upwards of three inches in circumference. It was very thin, but there was no appearance of aneurism; nor had it any muscular appearance. There was no unusual quantity of liquid in the pericardium. The heart, which was taken out for examination, was unusually large and heavy. Its appearance was healthy, except its over size.

The right lung, on the contrary, was much diminished in magnitude, and in about two and a half inches of its lower part the air cells were obliterated. The lower extreme of the left lobe partook of the same appearance, but it did not extend so high up. I could not exactly pronounce this morbid change hepatization. It did not so much resemble liver, as flesh, or muscle. It was rather an *incarnation* than *hepatization*. The margin, however, of the lower part of the left lobe, showed marks of incipient hepatization.

The evening of the inspection was cold, and without any exposure to heat, the liquid which was taken from the thorax coagulated spontaneously, so as to become as thick as the mother of vinegar, and might be removed in the hand. It must, therefore, have principally consisted of coagulable lymph. There was no encysted or hydatid phenomena anywhere discovered, but there were extensive adhesions of the pleura to the right lobe of the lungs. On feeling the lungs, one of the medical gentlemen present discovered a small bony formation in the right lobe. The fine florid color of the muscles and viscera showed no deficiency of oxygenation.

Remarks.—Considering the large quantity of liquid found in the thorax, and the diseased aorta and lungs, the apparent health and freedom of respiration, even to the night before our patient's death, may seem not a little surprising. The day before his death he was about his ordinary business, and, as I have said, came to my house. On the evening of that day he read, aloud, the whole of one of Baxter's sermons, after which, he perused the newspaper of the day. His appe-

tite was unimpaired, and his spirits fine, although he was fully aware of his danger.

It is a question not very easy to solve, why the paroxysms of asphyxia should not have increased with the increase of disease in the thorax. This was not the case; nothing of the kind had occurred for more than two months preceding his death. These ill turns, of which I do not think he had more than four or five in the whole, and they were short, constituted the amount of his bodily suffering.* We incline, on the whole, to refer this asphyxia to the state of the heart, whilst it was *enlarging*, and the valves while ossifying. Habit, which does such wonders, accommodated the system to the enlarged viscus; and the irregular action of the systole became more regular, but never was quite restored, as the pulse was always smaller in the right than in the left radial artery. If this does not satisfy the reader, he must form a better theory himself, by referring to the aorta, to the water in the chest, to the state of the lungs, or to all these phenomena.

I suspect that it will hardly be possible for any experienced medical man to read this account, and not be impressed with the belief that the life of Mr. H. might have been prolonged by proper remedies, properly adhered to. A paracentesis of the right side might have evacuated five or six pints of water. But he would not even submit to a blister, a remedy which I proposed to him, at my house, the day before his death. The fact was, he had but little faith in remedies which doctors did not think enough of, themselves, to recommend in a newspaper, and to pay the printer for advertising! Although I could not prevail on him to use, with regularity, the remedies which I thought most important, yet there was one which he used of his own accord, even more freely than I directed. This was the cardiac antispasmodic mixture, of which the balsam of Peru was the basis, before mentioned.

In his habits, Mr. H. was temperate to abstemiousness. Previous to his commencing my prescriptions, which was about two months before his death, he had some turns of difficult breathing, which attacked him when in bed. But these were never so severe as to cause him to rise, except in one instance. Latterly, nothing of the kind had occurred. In fact, there was nothing indicative of immediate alarm, except the flagging of the pulse before mentioned. Mr. H. was aware of my apprehensions, and it became, sometime before his death, painful and dreadful to him for me to examine the pulse in the right wrist, or to compare his pulses by feeling both wrists at once, which was my usual mode.

The crisis of his disease was death. Still it may not be unimportant to observe, that nature made an attempt of a salutary kind. This I infer from the profuse sweat, which was an attempt to rid the system of the flood of waters in the thorax. But in this sudoresis nature failed. The *vis medicatrix* was overpowered. But we may be taught the propriety of using sudorifics in hydrothorax.

Lebanon, Ct., January, 1837.

JOSEPH COMSTOCK, M.D.

* He had some of those neuralgic pains about the shoulder and deltoid muscle which accompany *angina pectoris*; but they were not severe, and passed, with himself and family, for rheumatism.