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ARTICLE III.

DID JESUS DIE OF A BROKEN HEART?¹

BY EDWARD M. MERRINS, M.D.

V.

IN our inquiry into the subject-matter of this article, it has thus far been shown that rupture of the heart cannot have been the physical cause of the death of Jesus, for the following reasons: (1) so grave a lesion, unless traumatic, never occurs except when the tissues of the heart are diseased; (2) profound grief, or other form of mental perturbation, can never directly induce it if the heart be healthy; (3) the symptoms characteristic of the lesion when it is complete, such as utter physical collapse and unconsciousness, were not exhibited at the time it is assumed the rupture occurred. There are still other objections to be brought forward.

This theory of rupture of the heart does not satisfactorily account for the flow of blood and water from the wound in the side after death, a flow which Dr. Stroud describes as having been copious, rapid, and easily seen by the distant spectator. Suppose it be granted, for argument's sake, that in the short time between the death of Jesus and the infliction of the spear wound in his side, the blood which was effused into the pericardial sac, in consequence of the rupture, underwent coagulation, and separated into clot and serum. Even so, while the serum might furnish the flow of "water" following the wound, as far as can be ascertained, it is conjecture only to say there would be a copious flow of blood also.

¹ Concluded from p. 53.

A short description of the phenomena of clotting may not be out of place. When blood is drawn from a living animal into an open vessel at the ordinary temperature of the air, in two or three minutes the fluid is seen to become semi-solid or jelly-like, and in about ten minutes the change has extended throughout the entire mass. This solid mass, clot, or crassamentum adheres so closely to the sides of the retaining vessel, that, if the latter be inverted, none of its contents escape. A little later, a light straw-colored fluid, serum, makes its appearance, and, the more the serum transudes, the firmer and harder does the clot become.

Such being the nature of the clots, it would have to be a very large and open wound through which they could issue. Owing to their size and consistency, they would be apt to plug the wound instead of passing through.

"In all the varieties of injury to the heart," says a recent writer, "the wound is found plugged with blood clot." In the pericardium, the clots would remain there practically as they were formed. Among the cases of ruptured heart collated by Stroud, there were a few in which post-mortem examination of the body was made, with the following results:—

1. "On opening the chest, the bag of the pericardium appeared much distended with fluid, and was of a dark blue color. On cutting into it, a pint at least of transparent serum issued out, leaving the crassamentum firmly attached to the anterior surface of the heart."

2. "On opening the thorax the pericardium was found distended, and emitted when divided a serous fluid; but the heart was entirely concealed by an envelope of coagulated blood in three distinct layers."

3. "The pericardium was so distended as to occupy a third part of the cavity of the chest. On opening it, a large quantity of serum was discharged, and two pounds of clotted blood were seen adhering at the bottom."

In these cases, as the heart was exposed and directly opened, there were no intervening tissues to prevent the flow of clots, as when the body is intact save for the wound; and yet in each case there was a flow of serum only, the clots remaining within the pericardium.

Therefore it is that a noted physiologist of his time, Dr. S. D. Haughton, who made a special and practical study of this subject, does not agree with Stroud, that, in spontaneous rupture of the heart, there will be a flow of both blood and water, if the side of the dead person be wounded after death.¹ There will be a flow of water, he contends, but not a flow of blood, only a few drops. As the result of repeated observations and experiments upon the cadavers of men and animals, he is convinced that rupture of the heart is by itself insufficient to account for the phenomenon recorded by St. John. When the left side of the body is freely pierced after death by a large knife, comparable in size with a Roman spear, he states the results to be as follows:—

1. There is no flow of any kind; only the trickling of a few drops of blood. This is what usually occurs.

2. There will be a copious flow of blood, but no flow of water. This happens when the patient was reduced to a state of asphyxia just before death, such as occurs in drowning, and in death from strychnine poisoning when the respiration has been arrested during a convulsion. In consequence of this asphyxia, blood is accumulated to a large amount in the lungs, and it retains its fluidity after death. The flow of blood following the wound in these cases, comes from the lungs, not from the heart.

3. There will be a flow of water succeeded by a few drops

¹ See *Speaker's Commentary on 1 John v.*; *The Church Quarterly Review*, January, 1880.

only of blood. This is found where death has resulted from pleurisy,¹ pericarditis, and rupture of the heart.

A copious flow of blood followed by a copious flow of water, or a copious flow of water followed by a copious flow of blood, he has never seen in the course of his experiments, nor has he ever seen the record of such an occurrence, except in the writings of St. John.

Unable, therefore, to harmonize the results of his experiments with the theory of Dr. Stroud that the flow of blood and water was mingled clot and serum from the heart, though still holding, with him, that there was indeed a rupture of the heart, he propounds another theory, by trying to combine the causes of the second and third variations as stated above. He contends that, in crucifixion, the victim is reduced to a state of asphyxia similar to what is found in drowning and in death from strychnine poisoning, with the same accumulation of blood in the lungs, and the same fluidity of the blood after death, and that it was from the lung which was wounded first there came the flow of blood, and from the heart the flow of water. This asphyxia, he thinks, is brought about by the weight of the body and its constrained position

¹ Premising that the words "blood and water," may be an *hendiadys* meaning "bloody water," it has been suggested that a traumatic pleurisy, the result of a heavy blow on the chest from some brutal soldier, would account for the phenomenon recorded by St. John.

To this it may be replied, that pleurisy is a disease, and, on various grounds, the imputation of disease to our Lord is repugnant to Christian thought. Besides, it is doubtful if a simple blow would be sufficient to induce a pleurisy with effusion in a healthy person, even though a rib were fractured. "Subcutaneous injuries of the pleura, such as are made by the ends of a broken rib, rarely give rise to any serious trouble. The inflammation remains strictly limited to one spot, and shows little tendency to spread." The present trend of medical opinion is to regard nearly all pleurisies as being essentially tubercular in their nature.

as it hangs upon the cross, interfering with the action of the muscles of respiration. By raising the body in spite of the pain it caused, the breathing could be relieved. "It thus frequently happened that a strong man of resolute will, by raising himself by the hands, or lifting himself on his feet, remained alive upon the cross for three or four days, during which his blood, in consequence of imperfect oxidation, became more and more venous and fluid, and was lodged in a larger proportion than was natural in the substance of his lungs; so that, if pierced after death, these organs would have given forth a copious flow of fluid black blood, like that observed to flow from the lungs of an animal killed by strychnia, or suffocated in water after much struggling. When it was necessary to terminate their sufferings before sunset, as in the case of Jewish criminals, death was hastened by breaking the bones of the legs and arms. The effect of the fracture of the legs and arms was to prevent the sufferer from relieving the agony of diaphragmatic breathing by restoring the action of the intercostal muscles, and he thus perished miserably in a few hours of horrible suffering, instead of prolonging his life for some days by the painful process of relieving the intercostal muscles by lifting himself by the muscles of the arms and legs. In either case, death was ultimately produced by deficient oxidation of the blood, and a post-mortem wound of the lung would be followed by a copious flow of dark and fluid blood."

This theory is ingenious, but it is not convincing. Among other objections, it might be urged, that, among the recorded instances of crucifixion, no mention is made of death from asphyxia. Death usually occurred by the slow process of nervous irritation and exhaustion, when it was not hastened by violent means. "In many cases, death was partly induced

by hunger and thirst, the vicissitudes of heat, and cold, or the attacks of ravenous birds and beasts; and in others, was designedly accelerated by burning, stoning, suffocation, breaking the bones, or piercing the vital organs." Also, it may be said, that breaking the arms and legs of a crucified person in the most rough and brutal manner conceivable, would be very apt to cause speedy death from profound shock, rather than from the slow effects of imperfect aeration of the blood in the lungs. But there is a still weightier objection when the symptoms are considered. Asphyxiation may be either rapid or slow. When a person is drowned, or dies during the convulsions of strychnine poisoning, asphyxiation is very rapid, and the mental and physical powers remain unimpaired, almost to the last minute of life. Not so in the progressive asphyxiation of a lingering illness or execution. The blood in this condition is not only imperfectly aerated, and therefore unfitted to support the nutrition of such vital organs as the heart and brain; it also becomes loaded with toxic impurities derived from the waste of tissue, and thus acts as a systemic poison. In the asphyxia of crucifixion, if such occurs, the morbid products of lacerated and inflamed wounds would also enter the blood stream. Blood in so impure a state is incapable of sustaining nerve force and muscular irritability. The heart therefore beats languidly, the very opposite condition to that which causes rupture, and the circulation of the defective and impure blood in the brain produces unconsciousness.

It is not possible now to witness this condition in crucifixion, but it may often be seen in certain diseases of the lungs, which it may be assumed the congestion of the lungs in prolonged crucifixion would closely resemble. In the later stages of acute suffocative bronchitis, for example, "the symptoms are those of progressive asphyxia,—a prolonged

struggle for breath, the duration of which is measured by the patient's cardiac strength. The skin, generally livid or cyanotic in tint, falls in temperature, and becomes covered with cold, clammy perspiration; the expired air grows cold; the feet and hands swell, in protracted cases the anasarca rising to the trunk; fitful dozes lapse into a state of somnolence, constant, except from momentary interruptions by the cough; muttering delirium, associated in some instances with slight convulsions, precedes a comatose state which is the immediate forerunner of death." Now, according to Dr. Haughton, this slow asphyxiation occurred in crucifixion, either when the victim had been hanging on the cross for three or four days; or somewhat more rapidly, when his arms and legs had been broken, the sufferings then lasting for hours. The circumstances of the death of Jesus do not correspond with either of these conditions. He was not on the cross for three or four days, but only for three or at the most six hours, nor were his arms and legs broken. What evidence is there in the way of symptoms, that in this short time, with the weight of his body supported by a projecting bar, and perfectly well able to raise himself in the manner described for the relief of difficult breathing, he was in a state of asphyxiation? To the last the mind of Jesus was unclouded, and his respiration unembarrassed, as shown by the spoken directions to his friends, the exclamations to the Father, and by the utterance of a loud cry as he surrendered his spirit.

The conclusions of this writer, so far as they were verified by his experiments, are valuable in this connection, as they show that a copious flow of blood and water cannot be accounted for on the grounds alleged by Dr. Stroud. His own largely theoretical opinion, that the flow of blood came from congested lungs, due to imperfect oxygenation, and the

flow of water from a ruptured heart, cannot be convincingly maintained.

VI.

After all, according to our author, it was not the exceeding weight of grief and physical suffering patiently borne for the sake of the world's redemption that broke the heart of Jesus, but the violence of contending emotions over his own spiritual state, because he had lost the sense of filial communion with God, and felt abandoned by him. "There was the desire of deliverance from the intolerable sense of the divine malediction, and the desire of fulfilling the will of God by enduring the malediction even unto death," and so there was a severe agony or struggle between these opposite motives which broke his heart. It is a serious objection to this whole theory, that it is inseparably entangled with certain theological doctrines concerning the most mysterious events in the life and death of our Lord, doctrines which have never met with general acceptance in the Christian church, our knowledge of the events upon which they depend being so obscure and fragmentary as always to leave room for sincere differences of belief. What actually occurred between Jesus and the Father during the crucifixion no mortal can tell, and the subject should be approached with the most delicate reserve, for we are standing on holy ground. "A feeling always seizes me," writes the thoughtful and devout Krummacher, "as if it were unbecoming to act as a spy on the Son of the living God in his last secret transactions with his Heavenly Father; and that a sinful eye ventures too much in daring to look upon a scene in which the Lord appears in a state of weakness and abandonment, that places him on the same footing with the most miserable among men." But the exigencies of his position do not permit Dr. Stroud to exhibit this shrink-

ing sensitiveness, much as he may have felt it. To prove the existence of the violent mental perturbation on the cross which lies at the foundation of his theory, he must necessarily undertake to give his opinion of what transpired in the innermost recesses of the Saviour's spirit during the crucifixion. The theology must, therefore, be accepted with his medical opinions, as they stand or fall together. It is with reluctance that one enters upon this subject; but it must be done, because the belief that our Lord died of a broken heart is seen to rest ultimately far more on theological arguments than on medical facts.

Admitting that the depressing emotion of grief is not sufficient by itself to cause a rupture of the heart, our author contends that Jesus, in the garden of Gethsemane, suddenly fell into a state of consternation and distress so intense, that, had he not been relieved by divine interposition, it would probably, within the short space of one hour, have terminated his life, by sheer physical exhaustion. "He had now for the first time to learn this peculiarly difficult lesson of obedience to the divine will, and found it almost insupportable." And this of One, be it observed, who repeatedly said that he came not to do his own will, but the will of him that sent him. Strengthened by angelic aid, "which enabled him to subdue the dreadful emotions by which he had been at first almost overwhelmed, there ensued mental agony," a violent conflict between opposite and contending emotions, over the bitter cup which was given him to drink. This cup "could have been none other than the cup of the wrath of God, 'the poison whereof drinketh up the spirit.'" "It was piety which prompted his reluctance to receive the cup, and piety which urged him to drain it to the dregs; and the deadly struggle between these opposite and contending emotions oc-

casioned that agony and bloody sweat, the natural prelude to rupture of the heart."

On the cross the same conflict was renewed in all its violence. "For three hours he sustained unutterable agony, in a deadly and incessant struggle between two opposite passions." There was "the awful spectacle of an innocent human being, dying of grief under the divine malediction." No help of any kind came to him now: he was left to suffer in helpless agony. The protection of God was withdrawn from him, and he was delivered into the hands of his enemies, including not only evil men, but evil spirits. Yet his mental sufferings proceeded not from men or demons, but from God, the displeasure of God being shown also in the mid-day darkness, a phenomenon attributed by this author to a volcanic eruption which rained ashes over the land. "To such a being as Christ the divine malediction must have been productive of the severest mental anguish; and although, from a regard to the object in view, the infliction would be sustained with the most dutiful submission, yet, in reference to his own personal feelings, it must have been endured with the greatest horror and repugnance. The natural effect of such a struggle on the body of Christ must have been, not a simple exhaustion of vitality, as might have happened from sorrow or consternation, but violent excitement and excessive palpitation, occasioning in the first degree bloody sweat, and in the second, sudden death from rupture of the heart." From the sixth until the ninth hour this appalling conflict continued without intermission, and it depended every moment on Christ's own voluntary yet reluctant concurrence.

At last his physical powers could no longer stand the strain, and there occurred the rupture of the heart, the agony culminating in the awful cry, "My God! My God! Why hast thou

forsaken me?" The remaining cries were uttered in very quick succession, and then he expired. Now in cases of rupture of the heart not traumatic, loss of consciousness, as previously pointed out, is almost instantaneous, and death takes place with great rapidity. But Jesus lived and retained consciousness, according to the Gospel narratives, for a considerable time after the cry of "My God! My God! Why hast thou forsaken me?" He exclaimed that he was thirsty, and drank of the vinegar that was offered him by the soldiers, who were probably delayed in the performance of this kindly act by the interference of the bystanders. He surveyed in all its vast range the work he had been sent to do, and said it was finished. Then came the final cry with which he surrendered his spirit. Says a great preacher: "Oh, what perfect peace, and what final courage! He has gently and quietly borne all up to the last moment, and then, without the least excitement, simply says, Father, into thy hands I commend my spirit." Dr. Stroud argues that the excessive excitement which led to this catastrophe of a broken heart, would occasion even these last words to be pronounced with vehemence. Much more can be quoted from him to the same effect, but we trust enough has been given. It is with mingled feelings that we turn from this stormy scene, to the account of another crucifixion mentioned by him,—that of a young Mameluke criminal, who hung upon the cross from Friday noon until Sunday noon, and who "bore his punishment with great firmness, without uttering a groan or changing his countenance, complaining only of thirst during the whole of the first day, after which he was patient and silent until he died."

If all that is said of the death of Christ be true, with its unutterable agony of mind occasioned by the deadly and incessant struggle between opposite passions, how can the cross

remain the symbol of patient and willing endurance of grief, suffering, and shame, and of perfect submission to the will of God, at whatever personal cost? When we in our turn and degree are called upon to drink the cup of suffering, the poet bids us:—

“Count each affliction, whether light or grave,
 God’s messenger sent down to thee; do thou
 With courtesy receive him; rise and bow;
 And ere his shadow pass thy threshold, crave
 Permission first his heavenly feet to lave;
 Then lay before him all thou hast, allow
 No cloud of passion to usurp thy brow,
 Or mar thy hospitality; no wave
 Of mortal tumult to obliterate
 The soul’s marmoreal calmness.”

Many of us greatly desire to possess our souls in this saintly calm, whatever happens; but, when the evils of life press sharply upon us, we chafe and fret, or, perhaps worse, our hearts rise in rebellion, and we doubt either the love or power of God. If in these dark hours we turn to the cross of Christ for light on our troubled life, and are told that, when the cup of suffering was pressed to the lips of Jesus, he regarded certain of the ingredients with horror and repugnance, that his soul was in such a state of mortal tumult as to subject his physical powers to a strain greater than they were able to bear, and that he actually died in a state of excitement, it is difficult to see where can be the example of calm submission, and the comfort and help, for us poor, ordinary mortals.

The present writer is no theologian, but he must record his dissent from such views, and he is glad that, in doing so, he is in the company of men of all shades of religious belief. To use the words of Keim, the narcotic drink was refused by Jesus, because “he would look death in the face with un-

troubled spirit, because he would give his followers in all times the highest lesson as to the spirit in which the cup of suffering should be received, with calm, clear consciousness, and willing submission to God's will." There may have been to Jesus a mysterious and temporary obscuration of the brightness of the Father's presence, but surely he knew that, above the tempestuous clouds of the events of the crucifixion, the Father's love remained unchanged, and, as the Author and Finisher of our faith, he must have trusted in it absolutely. The ability to hold an unconditional trust in the everlasting sway of divine justice, wisdom, and love, to subsist by it and in it, be appearances what they may, is the mark of a grand and lovely nature, writes Martineau, and he continues: "This it is that gives a majesty so pure and touching to the historic figure of Christ: self-abandonment to God, uttermost surrender, without reserve or stipulation, to the guidance of the Holy Spirit from the Soul of souls; pause in no darkness, hesitation in no perplexity, recoil in no extremity of anguish; but a gentle, unflinching hold of the invisible Hand, of the Only Holy and All Good,—these are the features that have made Jesus of Nazareth the dearest and most sacred image to the heart of so many ages." As the Collect for Good Friday in the service of the Episcopal Church expresses it, "Our Lord Jesus Christ was *contented* to be betrayed, and given up into the hands of wicked men, and to suffer death upon the cross."

But whether the theology of Dr. Stroud be sound or not makes little difference so far as the main subject under consideration is concerned. In any event, neither passive grief, nor the stormy stress of emotional conflict, is ever sufficient to rupture the walls of a heart not previously diseased.

There is little more to be added. It is not the special pur-

pose of this article to offer another theory in place of the one refuted. Opinions concerning crucifixion, with all its possible complications, and the manner in which life may be terminated by it, cannot be expressed with certainty, as this mode of execution has seldom or never, in recent times, come within the range of those fully competent to observe and record all the facts connected with it; and the records of the past do not contain the full and exact information indispensable to a perfect understanding of the subject. The Gospels contain all that is necessary the world should know of the sufferings and death of Jesus, but there is nothing in them to encourage medical speculation, and little to satisfy the scientific inquisitiveness of the pathologist. However, if an explanation must be attempted that shall exclude the supernatural, we can fall back on the view of Watson, and other of the older apologists, that the unusual rapidity of the death of Jesus was due to the physical shock produced by the pains and injuries inflicted during the actual crucifixion. In this condition of intense depression of the vital powers, consciousness is always blunted to some extent, it is true; but it is not usually abolished, and the sufferer is able to answer questions clearly. It is not essential that the injuries producing shock should *per se* be mortal. "There is a form of shock which is of some importance in medical jurisprudence. A person may have received many injuries, as by blows or stripes, not one of which, taken alone, could in medical language be termed mortal; and yet he may die from the effects of the violence, either on the spot or very soon afterwards. . . . It is a well-ascertained medical fact that a number of injuries, each comparatively slight, are as capable of operating fatally as any single wound, whereby some blood vessel or organ important to life is directly affect-

¹ Taylor, *Medical Jurisprudence* (1897), pp. 310, 311.

ed.”¹ That many others of the crucified did not die in this manner is no valid objection. The intensity of shock is largely dependent on the particular nervous organization of the individual; it is therefore much more apt to occur profoundly and fatally, in those of sensitive, exquisitely balanced organization, than in men with the coarse, phlegmatic temperament of the ordinary criminal. There are well-authenticated cases of death resulting from mental shock alone.

With regard to the incident of the spear wound, there is this to be said: When the body is examined after death, there is often found in the pericardial sac, even when the heart and its enveloping membranes are normal, from half an ounce to two ounces or more of serous fluid. This is denied by Stroud, but recent authorities affirm it.¹ It is possible that fluid to this amount may have made its escape through the opening in the side, and was accompanied by the small quantity of blood which exuded from the tissues after the thrust of the spear. This can hardly be described as a flow of blood and water in the sense conveyed by several of our most popular hymns, but it seems to meet the strict requirement of the Gospel narrative, which simply states, “And straightway there came out blood and water.” Whether, as a whole, this is an adequate explanation of the circumstances narrated by St. John, or whether it may not be better to hold that the death of Jesus was at least partly supernatural, must be left to the judgment of the reader.

To conclude: The theory that the physical cause of the death of Christ was a broken heart, is not in accord with med-

¹Allbutt, *System of Medicine* (1898), v. 727. A prominent pathologist and professor of medicine, Dr. Henry P. Loomis, of New York City, in a private communication to the writer, states that, in an experience gained from over three thousand autopsies, he has found that the pericardial sac normally contains about four drams of serous fluid, often more.

ical facts, and theologically the conception is inconsistent with the whole teaching of the New Testament, and alien to the spirit of early Christianity. It may be urged as an objection, that, in eliminating this pathetic feature of the crucifixion, we are surrendering one of the most persuasive appeals to the emotions. But the cross is an emblem, not of heart-broken despair, but of triumph; "not of morbid anguish, but of transfigured sorrow; not primarily of pain and death, but of pain and death as the path to unending bliss and the secret of eternal life." As even a Roman Catholic prelate expresses it, "The cross is not an object to be contemplated with morbid excitement and hysterical sobs; it is an emblem of salvation, of felicity, of life." Are there not other reasons on which to rest the appeal of the cross?

"If Christ was only three hours crucified,
After a few years of toil and misery,
Which for mankind he suffered willingly,
While heaven was won forever when he died,
Why should he still be shown on every side
Painted and preached in nought but agony,
Whose pains were light, matched with his victory?
Why not rather speak and write of the realm
He holds in heaven, and soon will hold below,
Unto the praise and glory of his name?"