

The Blindness of Saint Paul

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At the time of his conversion, St. Paul was struck blind for three days and only partially recovered his sight thereafter. The scriptures suggest that Paul suffered from central scotomata for the remainder of his life. The condition may have been caused by solar retinitis.

Paul the Apostle was for many years a devout pharisee and an enthusiastic persecutor of the Christians. When the first Christian martyr, Stephen, was stoned to death, Paul stood by and held the garments of his colleagues so that they might hurl the stones more easily. Paul may even have been in charge of this execution.

One day Paul was struck blind, and he remained so for three days. During this three-day period, he was changed from a persecutor of the Christians to a great evangelist of the Christian faith. Paul himself interpreted this episode as being the direct result of divine interference. His life history shows two straight courses abruptly changed by this event. The following is a direct quotation from Acts 9:1-10:

But Saul, still breathing threats and murder against the disciples of the Lord, went to the high priest and asked him for letters to the synagogues at Damascus, so that if he found any belonging to the Way, men or women, he might bring them bound to Jerusalem. Now as he journeyed he approached Damascus, and suddenly a light from Heaven flashed about him. And he fell to the ground and heard a voice saying to him, "Saul, Saul, why do you persecute me?" And he said, "Who are you, Lord?" And he said, "I am Jesus, whom you are

persecuting; but rise and enter the city, and you will be told what you are to do." The men who were traveling with him stood speechless, hearing the voice but seeing no one. Saul arose from the ground; and when his eyes were opened, he could see nothing; so they led him by the hand and brought him into Damascus. And for three days he was without sight, and neither ate nor drank.¹

Other Bible descriptions of this event can be found in Acts 9:10-20, Acts 22:1-14, and Acts 26:12-19. Of particular significance is Acts 22:6:

As I made my journey and drew near to Damascus, about noon, a great light from heaven suddenly shone about me.

The distance from Jerusalem to Damascus is approximately 125 to 135 miles, which is great enough to require six or seven days' journey across the desert on camel back.

Differential Diagnosis General Comment

It is generally agreed that the conversion of Paul was a decisive event in the history of the early church (Fig 1). It was the turning point from which Christianity went on to become the worldwide religion that it is today. It is surprising then that in spite of all that is written about this extraordinary event, very little attention has been paid to its medical aspects. Most of the discussion about his conversion has been contributed by theologians.

Some standard texts contain presumptive references to Paul's epilepsy.² He did fall to the ground, but he never lost consciousness and perhaps his companions also fell to the ground. The great light has been thought to represent the aura preceding an attack of epilepsy. Further evidence considered is the quotation from Galatians 4:14: "Though my

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condition was a trial to you, you did not spit out before me." In those days it was traditional to spit out if one was exposed to a person having an illness, especially if it was epilepsy.

Paul spoke of having a "thorn in the flesh" and investigators have suggested that he did suffer some permanent physical disorder (II Corinthians). Malaria was mentioned by Ramsey.³

Kraeling⁴ suggested severe migraine as a possible cause of Paul's "thorn in the flesh."⁴ He also suggested arthritis. These scholars were trying to find some chronic or recurrent condition which would cause Paul much suffering and yet allow him to travel extensively and live to a ripe old age.

Hisey and Beck⁵ in a most comprehensive thesis present the argument that Paul had suffered from a subarachnoid hemorrhage which stimulated the visual cortex and caused visual and auditory hallucinations, and at the same time this hemorrhage caused a partial blindness in the form of homonymous hemianopsia. Such a disorder would have necessitated massive involvement of the occipital and temporal lobes and yet Paul recovered completely and preached for 30 more years thereafter.

Freudians may have suggested psychosexual overtones and perhaps a catatonic convulsion. Some medical men may be convinced that Paul had hallucinations.

Ophthalmia has often been suggested. This is not a definitive term; however, eye infections were common in those days, and Paul might have had this, although the rapidity of onset and recovery do cast doubt upon the possibility.

It seems to us that for a clearer understanding of Paul's conversion and his concomitant illness, we should first review what is known medically about the man beforehand and what happened to him thereafter regarding any residua of the ailment which struck him on the road to Damascus.

General Review

What do we know about Saint Paul himself, especially his "past history" as an active and faithful Jew before the conversion? His health must have been excellent, and there is no mention of any ocular symptoms before the conversion. He must of necessity have had excellent vision to have studied long and hard under Gamaliel at the Torah. He was a student of some merit, and this was recognized by the high priests. Paul was

deeply religious and a mystic according to Albert Schweitzer⁶ (Fig 2).

In those days there was no scientific approach to physical ailments. Nearly all disorders of mind and body were thought to be due to the effects of demons or evil spirits. Everyone was superstitious. Paul was said to have been named for Sergius Paulus who was converted when his sorcerer, Elymas, was struck blind somehow by Paul.⁷

On reading the Acts of the Apostles and the Epistles of St. Paul, one is impressed by the frequent mention of visions and conversations with God and angels by Paul (II Corinthians 12:1-11; Acts 13:1-3; Acts 22:17-21; Acts 23:11; Acts 27:23-25; and Romans 15:9).

There might have been two processes going on at the time of Paul's conversion: first, a definite physical disturbance with ocular symptoms predominating; and second, an overlay of emotional and psychic factors.

Once more to reconstruct the events: The young man, then called Saul of Tarsus, was crossing the desert through the hills of Samaria on the road from Jerusalem to Damascus under a very bright sun in an overbearing heat. For six days he had been traveling, worn out physically, with his mind and soul racked with guilt and consciousness of his actions in persecuting the Christians and in assisting at the stoning of Stephen. Probably beset with self doubt, he could not convince himself that the man called Jesus of Nazareth who had been crucified might not be the Messiah that had been promised the Jewish people for many years.

Suddenly, at noontime, when the sun was at its hottest, Saul saw a bright light which blinded him, and he fell to the ground. He heard a voice telling him that it was Jesus of Nazareth who was speaking to him and there followed a direct communication and dialogue between them. Thenceforth, and for the rest of his life, Saul the Pharisee and anti-Christian, was to be known as Paul the Apostle, the devout missionary of the Christian faith.

When Paul arose from the ground he could see nothing and he had to be led by his companions into the city. He was ill and could neither eat nor drink for three days. During these days, he was blind until Ananias came and touched him when his vision improved dramatically. This must have seemed miraculous.

The sudden recovery may not have been so complete as it seemed at the time. We must now consider the events which followed the conversion. Throughout the next 30 years of his evangelizing mission, Paul remained healthy and vigorous, with good peripheral vision, traveling far and wide unaided to Cyprus, Asia Minor, Macedonia, Greece, and finally to Rome. But there is evidence that he had difficulties in reading, writing, and in recognizing people. Some Biblical passages indicate a partial blindness, which Paul referred to perhaps as his "thorn in the flesh." In Galatians 4:13-16 he said:

You know that it was because of a bodily ailment that I preached the Gospel to you at first, and though my condition was a trial to you, you did not scorn me or despise me, but received me, . . . for I bear witness to you that if possible you would have plucked out your eyes and given them to me.

Paul made reference to the fact that his handwriting was large and peculiar in Galatians 6:11: "See with what large letters I am writing to you with my own hand," and in II Thessalonians 3:17:

I, Paul, write this greeting with my own hand. This is the mark in every letter of mine: it is the way I write.

He customarily used an amanuensis, which should not have been necessary, for Paul was well educated.

Luke accounted the failure of Paul to recognize the high Priest sitting in counsel (Acts 23), which caused him considerable discomfort and embarrassment. He was struck across the mouth as punishment for this.

Often his words suggested a chronic anxiety about his vision in his use of metaphors and similes dealing with light and brightness such as in I Corinthians 13:12: "For now we see in a mirror dimly." In I Timothy 6:16 he speaks of the Lord of Lords "who dwells in the unapproachable light."

We would like to present the theory that following his attack of severe blindness, Paul suffered from bilateral central scotoma-ta for the remainder of his life.

Differential Diagnosis Ophthalmologist's Viewpoint

There are not many conditions that will cause sudden blindness in both eyes for three days, followed by permanent scotoma-

ta. Those that can produce sudden blindness in both eyes, however, are as follows:

Acute expansive lesions
in anterior cranial fossa
Occlusion of the remaining carotid
Chiasmal arachnoiditis
Optic neuritis
Ocular conversion reaction
Actinic choroiditis (solar retinitis)
Takayasu's pulseless disease
Bilateral homonymous hemianopsia

Optic neuritis might produce such a history; however, one would not expect both eyes to be affected at the same time. There should have been an interval of some days or weeks between the time that one eye and then the other became involved.

Pituitary apoplexy causes sudden blindness, but the history of subsequent recovery and an active and healthy life for 30 years certainly rules out the possibility of this having caused Paul's condition. This would also rule out homonymous hemianopsia or supraclinoid aneurysm or occlusion of the remaining carotid. One condition does seem to fit the entire picture: this is irradiation injury to the eyes resulting in ultraviolet burn initially, and symptoms of solar chorioretinal burn later.

Ultraviolet burn of the cornea is characteristically seen in snow blindness where the sunlight is reflected from the snow into the eyes; however, the same condition can occur when the light is reflected from the white desert sands. The effect on the eye is cumulative, and Paul may have received more than enough radiation, especially when he faced the sky. This is a biotic effect, and recovery from the acute stage of such burns usually requires several days of convalescence. The victim is temporarily blinded, cannot open his eyes, and suffers from much pain and anxiety. He is helpless and is compelled to remain in bed. However, as the epithelium rapidly regenerates, the sensitive bare cornea becomes covered and then the patient makes a sudden and dramatic recovery as did Paul.

Solar Retinitis

The severity of radiation burn in deeper structures of the eye is not evident at first. There is no pain sensation from the retina. The visible and infrared radiations are subjected to optical refraction by the eyes so that a small area in the region of the macula

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Fig 1.—The Conversion of
Saint Paul
Jacopo Tintoretto
National Gallery of Art
Washington, DC
Samuel H. Kress Collection

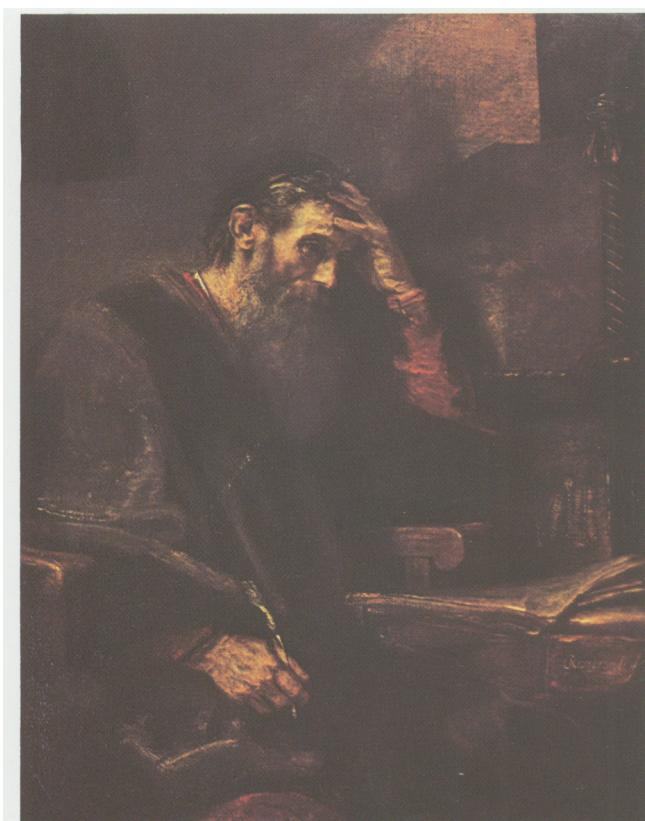


Fig 2.—The Apostle Paul
Rembrandt van Ryn
National Gallery of Art
Washington, DC
Widener Collection

Arch Ophthal

receives these rays focused here. A destructive lesion is thus produced in the retina and choroid in an area less than a millimeter in diameter. Microscopically, in experimental animals, it has been shown that the greatest destruction of tissue by the heat generated is in the pigment layer where the heat is absorbed preferentially.⁸ The rods and cones become swollen and granular, the choriocapillaris is intensely hyperemic with extravasations of blood, and the final development is a permanent hole in the macula. The remainder of the retina is hardly affected and therefore the individual should have normal vision in every way except for the presence of a dense central scotoma. In the case of chorioretinal burn without a flash burn, as with eclipse blindness, the subjective symptoms are characteristic.⁹ In most cases nothing abnormal is noticed except a dazzling sensation. Then shortly thereafter a diffuse cloud floats with irregular undulations before the eyes, associated with irritating after-images, photophobia, and occasionally photopsia and chromatopsia. After 24 hours the diffuse cloud contracts into a dense scotoma.

The objective signs are typical, although the fundus may appear normal when the subjective symptoms are marked. Initially, the macula seems somewhat darker than usual, a change doubtless due to choroidal congestion; in the more severe cases the central area may be raised and edematous, showing perhaps a gray appearance and some minute hemorrhages or a dark central spot surrounded by an edematous retinal detachment. The typical appearance which rapidly develops at the fovea is that of one or more yellowish white spots, oval in shape or sometimes crescentic, surrounded by an irregular background of fundus. Careful ophthalmoscopic focusing suggests that the central spot is a burnt-out hole in the pigment epithelium, while the surrounding stippled ring represents an aggregation of pigment. Even exposure to a lightning flash has

been known to result in these thermal lesions.

Saul was stricken at noon, when the sun was at its height, at a time when he was fatigued and in an emotional and spiritual struggle. Paul had been traveling across the desert for six days. The light which he saw was "brighter than the sun," according to Acts 26:13. It could have been lightning, or he may have faced the sun itself. There would have been more than enough ultraviolet burn of the corneas of Paul's eyes to disable him for several days. The infrared heat focused on the retina would no doubt have caused a permanent disturbance to the central vision and allowed his peripheral vision to remain intact, giving him the central scotoma which remained permanently.

Conclusion

Evidence is presented that the conversion of St. Paul occurred simultaneously with an attack of blindness that was severe at first, then persisted chronically throughout the remainder of his life. This disturbance of vision must have greatly influenced Paul's thoughts as well as his preachings. The condition may have been caused by irradiation effects upon the eyes.

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