In the Eyes of the Dead

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It was a commonly held belief throughout the latter half of the nineteenth century that the last image seen by the eyes of a dying person would be “fixed” on the retina for a considerable period of time. Therefore, if a murdered person’s eyes could be reached without delay, the culprit could be identified from the retinal image. This seems to have been a popular belief which resurfaced occasionally throughout man’s history, but the earliest specific suggestion that such images could be photographed1 for criminal investigations was made by William H. Warner, a prominent British photographer of the 1860s.

In April, 1863, a young woman, Emma Jackson, was murdered in St Giles, London. Warner immediately sent a letter to Detective-Officer James F. Thomson at the Metropolitan Police Office, Scotland Yard, informing him that “if the eyes of a murdered person be photographed within a certain time of death, upon the retina will be found depicted the last thing that appeared before them, and that in the present case the features of the murderer would most probably be found thereon.”*2*

He based his assertion on the fact that he had, four years previously, taken a negative of the eye of a calf a few hours after death and upon microscopic examination of the image found depicted the lines of the pavement on the slaughterhouse floor. Warner stated: “The subject is of too great importance and interest to be passed heedlessly by, because if the fact were known through the length and breadth of the land, it would, in my estimation, end materially to decrease that most horrible of all crimes – Murder.”

Scotland Yard took Warner’s suggestion seriously. James Thomson replied, on behalf of the Metropolitan Police Office that photographing the eyes of a murdered person “is of the greatest importance.” He was obviously conversant with the idea long before Warner’s letter, stating that he had conversed with an eminent oculist four years earlier and was assured that unless the eye was photographed within twenty-four hours after death no result would be obtained, “the object transfixed thereon vanishing” in the same manner as undeveloped negative photograph exposed to light.*3* Thomson did not photograph the eye of Emma Jackson, the murdered woman who had instigated this correspondence, because she had been dead forty hours before Thomson saw the body, her eyes were closed, and she was already buried by the time Warner’s letter arrived.

If the idea of retinal imagery after death was not new, Warner at least sparked off renewed interest in the subject. The editor of The Photographic News was asked for

more details. He replied that he knew nothing personally about the subject “beyond the reports often alluded to.” Warner himself was too busy “enlarging, printing, etc., etc., to enable him to give that attention to the subject which it justly demands.”

The prestigious medical periodical, The Lancet, considered the subject merely demanded burying, along with the corpse. It wrote:

The multitude of reasons given by the sapient superintendent of detectives for not attempting an absurd impossibility will remind his readers of the forty reasons of the Mayor for the town-gunner not firing a salute, of which the first – namely, the absence of powder – was held to be sufficient The information derived from the eminent oculist is singularly interesting. But, before attempting the photographic feat which is suggested, Mr Thompson might find useful practice in endeavouring to subtract the sound of a flute from a ton of coals, or to draw out the moonshine from cucumber seeds. Quid vetat ridendeo dicere verum. Mr Warner has hoaxed himself, and the superintendent of detectives takes the name of the oculist In vain. ‘Stone walls do not a prison make,’ and the bars on Mr Warner’s photograph were not akin to the pavement of the slaughterhouse. Mr Thompson may assure Sir Richard Mayne that such a photograph taken more than twenty-four hours after death will succeed as well as if taken two minutes after – and no better.*4*

But the story would not die. Throughout 1864 and 1865 more than a dozen accounts of retinal imagery, particularly in the case of the dead, appeared in the photographic press. Apart from occasional isolated incidents, the subject lay dormant for ten years and then was rejuvenated with fresh vigour in 1877, and this time it didn’t die down until the turn of the century. There was an interesting murder case in 1925 which was reportedly solved by photographing the retina of the victim, and as late as 1948 the subject was being treated with respect, at least by some scientists and police organizations. Crime novelists also found in such reports a new twist in their detective plots.

One of the earliest crime stories that represents a murderer as being convicted by a photograph of his victim’s eyes, upon the retina of which was pictured the features of the assassin, was published in the New York Ledger of 1863, by Mrs Southworth. This story seemed to have inspired a photographer named Adams, of Evansville, New York, to investigate the phenomenon in person. Adams was also spurred in this direction by various reports from France where “mysterious murders (were) unravelled through the instrumentality of Daguerre’s wonderful art”:

On Sunday forenoon Mr Adams, a photographist of this city, at the solicitation of some gentlemen who had read of similar experiments in France, took his instrument and visited the scene of the late murder in German Township. This was some thirty hours after the murdered man had breathed his last. There was a great deal of dust flying and a great crowd collected which materially interfered with the success of the experiment; but notwithstanding these unfavourable circumstances, Mr Adams succeeded in taking

a tolerably fair ‘negative.’ Upon this he has been experimenting, and yesterday we were called on to witness the results of his experiments.

He had taken an ambrotype picture of the eye of the deceased, and then rubbed out everything but a single object apparently in the centre of the eye; this was placed under an ordinary magnifying glass. At the first glance the object appeared blurred and indistinct, but on getting the proper focus the outlines of a human face were at once distinguishable. The image was apparently the face of a man with unusually prominent cheek bones, long nose, and rather broad forehead. A black moustache was plainly seen, and also the direction of the eyes, which seemed to be looking at some object sideways. One of the eyes was as plainly seen as the eyes in a common ambrotype or ferrotype. Some who examined the image thought the man of which it seemed to bear a resemblance had a Roman nose and also had on a cap.

Mr Adams is continuing his experiments, but whether he will succeed in making any clearer developments, remains to be seen. His labours thus far are abundantly rewarded by the success which has attended his efforts, as it seems to us he has demonstrated that an object was pictured upon the eye of Mr Herke at the time of his death, and that the object was a human face.*5*

Such reports were now pouring into the newspapers and photographic press from all over the world, particularly from France where the phenomenon was treated with respect. The editors were obliged, from their positions of authority, to comment on the validity of the cases. This posed problems because, although the accounts seemed factual enough and were often supplied by respected photographers, there was no basis in accepted fact for supposing the eye of a dead person retained the image of the last object or person seen. They could believe the idea that the retina received the impression, and that it might indeed be retained for a short while; but how does the retina process the property of fixing the image? As one bemused writer stated: “If, in the living subject, the retina only receives a momentary impression, how and by what physiological process can it, in the dead subject, retain such an impression several hours after death?”*6*

The answer was not forthcoming. By now the editors were ruing Warner’s revival of the subject. Within nine months reports which seemingly confirmed the phenomena were being printed from London, Paris, New York and now Moscow. Not only the photographic press was involved; The Times also gave prominence to the following report:

A tale of a murder, perpetrated in a mysterious manner, and of the discovery of the murderers by scientific means, is now the common talk of the inhabitants of the Russian capital. In the so-called old city, on the right shore of the Neva, behind the fortress, is a small house, which enjoys the reputation of having once been the residence of Peter the Great. One of the few rooms in the house is stated to have been used as a sleeping chamber by the celebrated monarch, and this apartment is now

visited with feelings of veneration and awe by many thousands of Russians. Although the room is not in reality a chapel, a priest is attached to it, and it is richly adorned with gold and precious stones, on which account two soldiers are constantly on duty there. A few evenings since, after the priest had withdrawn to his dwelling, situated on the opposite side of the street, he was summoned to return to the chapel, as two men required his services. The good man soon repaired to the little chamber, and afterwards returned to his house. On the following morning the two soldiers on guard were found murdered at their posts and the alms-box, which contained 400 roubles, had disappeared from its accustomed place, while the costly articles with which the room was so plentifully adorned were found undisturbed. It was suggested that the eyes of the murdered soldiers should be immediately photographed, in the hope of successfully testing the discovery recently made in England; when, to the surprise of all, the result was the production of the portraits of two soldiers of the private guard at the palace, on whose breasts were the insignia of the Cross of St George. The murderers were at once sought out and apprehended.*7*

The next lengthy report originated in San Francisco, and appeared in Scientific American:

The experiment of photographing the retina of the murdered woman's eye, despite the persiflage and incredulity with which it has been in most quarters received, has either developed a remarkable coincidence or produced a wonderful result. Stamped upon the centre of the retina, and conveyed by the photographic process to the plate upon which the picture was taken, there is plainly to be seen the outline of a human figure, so plainly as at once to arrest the attention of the most unimaginative eye. The figure is that of a tall dark man, the lower part of the face muffled in a heavy black moustache and beard, the left arm extended, and the whole body thrown into the position of a man doing some violent deed. The face has enough of outline to suggest the possibility of filling it up so as to recognize the man were he met in a crowded street. The bushy hair surmounting a low forehead, heavy eyebrows arching over the cavernous depths where the eyes be, the shadowy suggestions of the whole face, which cannot be described, but which impress the observer with a strange weird horror, causing one to start back as though with profane hand he had rent the veil and caught a glimpse of that world that lies beyond the confines of the grave. It is idle to laugh at such things. A fool can deny everything, but it is only a wise man who can seriously make up his mind to believe anything.

The writer is not at all an imaginative man (?) and took no stock in the unauthenticated accounts of marvellous successes, which had attended similar experiments in France. Physiology and philosophy both seemed to laugh at such a theory, and the writer was prepared to treat the thing lightly. But seeing is believing; plainly from the photographic plate the figure of a man looks out, the last object the murdered woman saw on earth, as when she turned her piteous eyes to heaven for help, and saw only the cruel face of the murderer bending over her, while his remorseless hand held the sharp knife quivering to her throat.

To suppose that the photographic figure to which we refer is the result of an accidental grouping of shadows, is simply to seek a miraculous explanation for a very simple natural fact. For it is much easier to suppose that the outline of the murderer was caught on the sensitive retina than to believe that in the only instance in which the experiment has been attempted in this country, a combination of light and shade should have occurred to produce a shape so exactly like a human figure as to deceive many sensible and unimpressionable men. In any event, the experiment is worthy of further trial and demonstration is easy. Oxen are killed daily. Experiment's by photographing their eyes would soon determine whether there is anything in this theory or not.

Whether or not, granting that the experiment proves successful, it will ever prove of any actual use, is a matter of question. For, once establish this fact, and murderers will punch out their victims' eyes before leaving them. And the dead retina might in some instances mislead the living judges. For supposing that a man were talking to and facing you, and that another, suddenly coming up behind, dealt a blow which finished him. Your image would be the one impressed upon his retina, and an innocent man might hang were the eye taken as conclusive evidence. The coroner in this case mentioned to the jury that he had had a photograph made of the retina of the eyes of the murdered woman. It was imperfect, and showed nothing. He did not have any faith in the thing, but for curiosity's sake he would have another ambrotype taken immediately.*8*

As one editor remarked: "The long-lived travelled canard, started in a daily paper by Mr Warner, is still moving."*9* And move it did, this time to Florence. This case initiated a flurry of investigation and is therefore worth quoting at some length. By now, the press had had enough of these strange reports and was anxious to lay the matter to rest, once and for all. The following information has been pieced together from reports in Harper's Weekly, The Photographic News, Morning Post, Daily Telegraph, The British Journal of Photography, and the Morning Star.

On 13 April, 1864, a humble but respectable woman, Luisa Carducci, who let lodgings, was found murdered in her house in Florence. The corpse was found lying on the floor, with her throat cut from ear to ear. There was a pool of blood below her head but no blood marks in any other part of the house. Close to her body was a handkerchief, presumably dropped by her assailant. The house was also robbed of various objects, trinkets and cash As no screams or cries of help had been heard by the neighbours it was assumed, by the Florence police, that the murder had been committed by two men, who had obtained entry on the pretext of viewing and hiring one of her rooms. While one man placed a handkerchief over her mouth, stifling her screams, the other had slit her throat.

At this point the police officer in charge of the investigation, Leopoldo Viti, applied to the higher-administrative and legal authorities for permission to have the eyes of the

murdered woman photographed on the possibility that the retina would depict an image of the murderer. Permission was refused.

Two months later, on 2 June, another lodging house keeper, Ester Cellai, was found murdered in her house. All the details were identical. The body was stretched out on the floor of a room, the throat cut from ear to ear, the handkerchief close to the body, and valuables stolen from the house. Also, the woman was alone in the house at the time and there was no sign of a forced entry or struggle. It seemed as if the same murderer had claimed another victim.

Viti again applied for permission to have the victim's eyes photographed; again, permission was refused.

On 22 August, a third murder was committed under almost identical circumstances. A lodging house keeper, Emilia Spagnoli, was found lying on the floor with her throat cut, with a handkerchief by the body. In this case there was a slight difference in that Spagnoli had resisted her attacker, and was stabbed and cut in many other parts of the body. There were seventeen knife wounds in all. Viti again insisted that the eyes of the murdered woman should be photographed. This time his request was granted. Luckily, for Viti, the body was lying on its side, with her right eye turned upward. Immediately after the discovery of the body, the eye was photographed, under the direction of the examining judge, and the negative image greatly enlarged. There on the final print was a two inch high human face, dim and nebulous but none the less recognisable. It depicted a man with "a peculiar dilatation of the nostril, a depression of the upper lip … an unusual elongation of the mouth, a square but double chin, a certain massiveness about the region of the cheek bone, and the outline of a whisker."

The photograph was made by one of the Alinari brothers, famous nineteenth century photographers, who lived in Florence and specialized in copying art works, selling the prints to Victorians on the Grand Tour. As one writer, who described the murder and its aftermath "of which I was myself an eye-witness," remarked: "When I mention that Alinari, the first photographer of Florence, and indeed possessing a European reputation, was the artist by whom the work was executed, I need say nothing more as a guarantee of the fidelity and care employed on the occasion."*10*

The police already had their suspicions about the murderer's identity. Benjamino dei Cosimi, a native of Velletri, was a suspect in several cases of murder in that town. He travelled to Corsica, then to Leghorn and on to Florence. He was seen close to the location of the first murder but had disappeared before he could be picked up for questioning. He reappeared in Florence at the time of the third murder. When arrested, Cosimi had in his possession articles belonging to all three women and a bloodstained knife.

The photographic image, taken from the retina of the third victim, displayed a remarkable similarity to the appearance of Cosimi. "Whatever there is of marked

prominent individuality in that first nebulous profile has an exactly corresponding feature in the likeness of the living prisoner." The photographs, with all the accompanying details, were sent to the Medical College of Florence and to the medical colleges of Naples and Milan. The Prefect of Florence authorised a series of photographic experiments to be instigated on the eyes of the patients in the hospital immediately after their deaths.

The Photographic News summed up the reaction of all commentators*: "At length … we meet with a case which bears unusual evidence of authenticity, and also admits of satisfactory verification … Nothing can be clearer or more satisfactory."*11

Unfortunately the magazine's idea of "verification" was to write to the wrong photographer– it contacted Pietro Semplicini rather than Alinari. This was understandable since the Florence newspaper, Gazzetta del Popolo, had also named Semplicini as the photographer by mistake. Semplicini wrote back that he was not the photographer in question, that Alinari had taken the picture, and that he himself had not seen the results but as far as he knew, the accounts of the image on the retina were false. The Photographic News accepted this assumption or speculation as fact, and used Semplicini's testimony as final evidence that the story was false, without bothering to contact Alinari directly.

The seed of doubt had been sown, however, after what had seemed on first encounter to be a convincing proof of retinal imagery. The seed grew into a strange shape when the correspondent of the Daily Telegraph asserted that "the hazy outline which, in the photograph, we are asked to believe represents part of a man's face is on the cornea of the eye, and not on the pupil (sic!) at all."*12*

As a writer remarked, the image "might as well have been on the victim's nose." With doubt piled on doubt, periodicals which began their reports with assertions of the veracity of retinal images at the moment of death, struggled to reverse direction in an untidy confusion. By now, the writers "did not hesitate to avow my entire disbelief" in the phenomenon. The very idea was absurd – as absurd as colour photography and the philosopher's stone, "which will probably be found at the same time." The case of Cosimi, pictured in the eye of his victim, was finally closed by The British Journal of Photography by printing the substance of a letter from Alinari, the photographer:

All that the public papers have related about the discovery effected by means of photograph respecting the eye of the Spagnoli is false as far as regards the result of it. We executed the photograph of it, and the enlargement also, but neither in the one nor in the other did we discover what is presumed it showed …*13*

That seemed to be the end of the matter. But the idea of permanent images of the last view seen by a dying person, or animal, was too fascinating not to resurface. The anecdotes became stronger as their basis in fact was removed. A fine example was a fishy story:

The mistress of a house was cleaning a large cod fish, when, to her astonishment, she discovered an exact representation of a fisherman in the eye of the fish. It was a very distinct miniature likeness of a fisherman, with his sou'-wester on, and fully equipped, in the act of hauling the fish into the boat.*14*

Wondrous tales of photographs which miraculously appeared in opposition to all known laws of optics and chemistry were told, published and reprinted with variations throughout the world's press. And these images were not restricted to the retina; they could appear anywhere, at any time:

It seems that Mr J. J. Davis, of Findlay, Ohio, went out to feed his cow last year. When he left the house, he had a photograph in his pocket, but when he returned he discovered that it had disappeared. He made a long and anxious search for it, but could not find it. Recently the cow gave birth to a calf, and on the left side of the calf's neck is a hairless spot about six inches square. In the centre of the spot is a capital likeness of Mr Davis, and that gentleman is of opinion that he must have dropped the photograph into the food that he gave the cow on the occasion above mentioned, and she had eaten it. In some way, known only to the mysterious laws of nature, the photograph made an impression on the unborn calf. A number of Mr J.J. Davis's friends have seen the calf in question, and they all corroborate his story.*15*

Photographs could even appear on the inside of an oyster shell at the bottom of the sea:

The following story comes from the Ruckland Herald, and is therefore quite sure to be true. There was once an oyster dealer, who had his stand in the Californian Market. Among his wares one morning he found a bivalve of such superb dimensions that he concluded to open it and make his lunch thereupon. At this point we must digress for one moment to explain that the largest variety of American oyster is proportionately as large as an American lie when compared with the European variety; in fact, Thackeray used to declare that a stewed oyster in the United States resembled nothing so much as a boiled baby! Well, that dealer opened his oyster, and found to his amazement on the surface of the inside shell – a photograph of a lady!

As you may imagine, all thought of lunch was abandoned, and the oyster dealer was shortly surrounded by a curious crowd. Speculation was busy, and conjecture flew madly about. But presently a gentleman stepped up, peeped, gazed, shrieked, and fainted away. It is impossible to faint long in the neighbourhood of an oyster stall. There are too many buckets of dirty salt water lying around. So presently this gentleman recovered consciousness, feeling and smelling for all the world like a decomposed mermaid. He then told the following story.

It was in the broad Pacific, in the equinoctial (or some other kind of) gales, that his fair young wife fell overboard amid the sharks and whales and oysters. This tragical event

happened just over the exact spot from which had come this batch of oysters; and the photograph was the photograph of his wife. He presumed that the oyster, opening its shell to air its appetite, placed itself in such a position that the image of the deceased was reflected upon the bright inside shell, and there by some unknown process photographed. It was only a negative, of course.*16*

The close of the Cosimi case in 1865 seemed to have put an end to the plethora of reports about murder and images in the eyes of the victims. In 1877 the whole issue was revived. The spark which set off a blaze of speculation was not a personal anecdote (by Warner), which had instigated the reports ten years earlier, but a series of carefully controlled experiments by two prominent and much-respected scientists.

Late in 1876 a Professor Franz Boll (1849–1879) who occupied the chair of physiology at Rome and was a pupil of Max Schultz and Du Bois Reymond, discovered the fact that the external layer of the retina possesses in all living animals a purple colour. This purple surface, he found, bleached on exposure to light, but regained its original colour in the dark. Like pure silver iodide an image would be impressed upon it by the agency of light and if placed in a dark room the image would disappear, and the surface was again ready to receive a second image. This purple colour, which Boll called seh-purpur (see-purple), vanishes immediately after death. He later modified his views in the light of experiments which showed that the retina remained sensitive, under certain conditions, for up to twenty-four hours after death.

These experiments in the “photographic” sensitivity of the retina were confirmed and extended by Willy Kühne (1837–1900), professor of physiology at the University of Heidelberg, and “a name well-known among microscopic anatomists.” In January 1877 Kühne reported his results in a leading German medical journal.17 He stated that he had been able not only to view the disintegration of the seh-purpur but also render the image permanent. In this way he had obtained ‘actual photographic images upon the retina, corresponding with objects which had been looked at during life.’ Kühne found that the purple colour did not disappear immediately after death but if kept in a dark room it would remain sensitive for twenty-four hours. In other words it was light, not death, which rendered the retina insensitive. However, the retina was only resensitised after light-bleaching when attached to the back of the eye. Kühne removed a rabbit’s eye and lifted a corner of the retina. The colour of this flap rapidly bleached, but as soon as the flap was replaced the purple colour was restored, “so that the eye carries with it a living substance which has the power of resensitising the photographic film whenever such a process becomes necessary.” It is the bleaching of this purple, by the action of light, which produces ”an actual photograph produced on the retina which can be fixed and preserved.” Kühne called these images “optograms,” (now called rhodopsin).

His first optograms were obtained in the following manner. A rabbit was restricted so that one of its eyes (the other was covered) was fixed upon an opening in a window shutter, with an aperture of 30 centimetres square and with the rabbit’s eye 11/2

metres distance. The head of the rabbit was covered with a dark cloth for five minutes so that the seh-purpur was as sensitive as possible. And then the rabbit's eye was exposed to the window light for three minutes. His head was instantly cut off and the eye removed in a dark room. The retina was extracted and placed in a five percent solution of alum.

The second eye, which had been kept in the dark throughout the foregoing operation, was then exposed to the window light two minutes after death for the same duration as the living eye. The retina was then extracted and placed in an alum solution. Both retinae were "fixed" in alum for twenty-four hours and then examined. The result, claimed Kühne, was a clear square image with sharply defined edges, the second retina image being more sharply defined than the first living-eye image.*18* The cross-work of the window panes was sharply depicted.

Arthur Gamgee, a physiologist from Manchester, England, quickly duplicated the experiments and "is able to confirm them in every particular." Gamgee's paper, quoting the researches of Boll and Kühne, was published in Nature, 1 February 1877.
As might be expected, the photographic press was exceedingly interested in these tests and were quick to point out the analogy between the eye/retina and the camera/emulsion:

That photo-chemical processes take place in the retina is a matter, therefore, beyond all doubt, and photographers to a man cannot but feel deeply interested in the analogy here shown to exist between the eye and the camera he uses everyday.*19*

The photographic writers were equally quick to see the connection between these experiments and "that old canard" of the murderer's image in the eye of his victim. Such a discovery – as the authors of it point out – may lead to the supposition that there may be something, after all, in those stories of which we frequently hear, of images being visible in the eyes of persons after death, of the retina of murdered men, for instance, showing plainly the image of those who slew them …*20*

Again the suggestion was made that the technique be used for the identification and detection of murderers. This time the photographer and correspondent was H. Wilson (The Photographic News, 1 June 1877, pp. 262–263). The editor replied that a) the idea was not new and b) it did not seem to lend itself to any practical application. The editor's opinion seem grounded in fact. Boll, himself, had an opportunity to investigate the idea.

On 5 March 1877, a criminal was executed in Vienna, at 7.15 am in a badly-lit prison yard, surrounded by high walls. Immediately after death, the executioner closed the victim's eyes and kept the light from the retina. Within two hours Boll was on the scene. He made a microscopic examination of the retina. His conclusion was that the visual purple was still present, so that the eye still possessed photographic properties, but that no trace of an image was visible. The conclusion was that even if an image had

existed it would have disappeared since the membrane behind the retina would have resensitised the purple; the light in the prison yard was too weak to produce an image; this image would only have remained if the retina was immediately “fixed” in alum. The fresh hopes of the retinal image detectives again diminished if they were not completely dashed.

An interesting article on the experiments of Kühne and their relevance to retinal images of murder was contributed to The Photographic Journal by W. S. Bird, under the title “The Photography of Vision” in 1879.21 Bird states that Kühne also succeeded in fixing the images on the retina of a recently decapitated human head “but the exposure in such case was much longer than when the experiment was conducted with the living animal.” As a result, Kühne believed that optography was an established fact and that it would soon be possible to obtain landscapes and portraits photographed on the retina. Bird concluded:

Enough has … been said to show that it is not exceedingly strange if a ready credence has been given to accounts of images impressed on the living retina with uncommon vividness being found there shortly after a violent death and becoming a damaging witness by the dead victim against the murderer. Fixing the photographic image thrown on a daguerreotype plate was an almost miraculous feat at first, and that nature should be found more wonderful than art is an ordinary experience.

This roller-coaster ride of high hopes and subsequent doubts and fresh possibilities continued until the turn of the century, by which time the astonishing new x-rays so captured everyone’s imagination that all other extraordinary topics seemed pale by comparison. Meanwhile, efforts to use retinal photography, or optography, in murder cases proved inconclusive at best. In January 1880, the Manchester police authorities had a photograph taken of the eyes of Sarah Jane Roberts, who was murdered in Harpurhey. The results were not made available. But the attempt did provoke the following remarks by Dr A. Emrys-Jones, honorary surgeon of the Manchester Royal Hospital:

Were Sarah Jane Roberts’ eye immediately removed after the murder, and subjected to careful examination, I think it possible that one might trace the outline of the murderer, or the weapon used in the murder, on this visual purple. I am not aware that this has ever been tried… There can be little doubt, however, that optography will yet be brought to a much more perfect-state.

The photographs of Sarah Jane Roberts’ eye were probably not satisfactory due to the time delay between death and the photography, and to the fact that she was photographed outdoors in sunlight. When the coffin arrived at the cemetery at Christ Church, Harpurhey, it was taken out into the garden and the body photographed by James Mudd, an eminently respectable photographer of Manchester who was renowned for his highly crafted landscapes. Such conditions, in the haste prior to closing the coffin and burial, would have not been ideal for a satisfactory result. It

seems, also, that the test was doomed to failure since Sarah Jane Roberts was killed by blows to the back of the head; she probably did not even see her murderer.

Meanwhile, it was claimed that Kühne had succeeded in obtaining a retinal image of a man, showing the clear outlines of his head, the limits of the hair and the shirt collar. The possibilities of obtaining retinal imagery were given encouragement (that it might be possible under certain extreme conditions) and discouragement (that it was highly unlikely at the present time in the vast majority of murder cases) by Dr Ayres, who made over a thousand experiments in taking optograms of the retina of animals while working in Kühne's laboratory in Heidelberg. Ayres published his report in the New York Medical Journal of 1881.

Kühne suggested that Ayres make an optogram of Hermann Helmholtz and send it to him in acknowledgement of the value of his researches in physiological optics, carried out while he was professor of physiology at Heidelberg. Ayres secured a large negative of Helmholtz and placed it over the eye of an animal which had been doped. The animal had been in the dark for hours. The exposure was made for four minutes in bright sunshine. The retina revealed a dull picture – an image of Helmholtz's shirt collar and the end of his nose. The light transmitted through the negative was not sufficient to bleach the visual purple. As the purple is rapidly regenerated in the living retina, Ayres assumed it had been restored as fast as it was bleached. He tried again. This time he decapitated the rabbit and waited until the regenerative system of the retina had waned. He then exposed the eye to the Helmholtz portrait. The result of the optogram was better – but not good enough. And that seemed to be the end of the experiment. It is difficult to see why Ayres did not continue his tests using a less dense negative, more intense transmitted illumination, longer exposures times and so on. Perhaps this little experiment, no more than a novel idea, interfered with his more serious laboratory work … for what ever reason, Ayres failed; his conclusion was that, if such images were difficult to obtain even under ideal laboratory conditions, belief that retinal images would be permanently recorded at the moment of sudden death were "utterly idle."

Utterly idle or not, the wish to believe remained strongly entrenched in the public's mind, particularly as regards its use in the detection of murderers. Even the case of Jack the Ripper, who murdered five women in 1880, involved a peripheral mention of retinal photography. Dr G.B. Phillips, Official Police Surgeon at the time of the Whitechapel murders, was called as a witness in reference to the murder of Annie Chapman. He was asked for his views on the possibility of obtaining a clue to the murderer's identity by photographing the eyes of the dead woman. But "as might be expected" he gave no hopes of any useful result. Incidentally, Phillips was "expected" to reject the notion of photography because he had endeavoured to suppress much information on the nature of the mutilations. It was this action on his part which fuelled the notion that the murderer was "some over-wrought experimental physiologist wishful to obtain living tissues from a healthy subject, for experimental use."*24*

In 1891 a photographic exhibition in St Petersburg, Russia, displayed an enlarged photograph of the retina of an eye, which, it was claimed, depicted the image of a man. A young lady was murdered at Samara and a retinal photograph taken immediately after the discovery of the body. There on the optogram was the image of a soldier "so clearly imprinted on the retina of his victim that it was possible to discover the criminal, and bring him to justice."*25* One year later a book appeared in Moscow, the Russian title of which translates: Is it possible to obtain in the eye of a person killed a photograph of the murderer?, by R. Tille. (A copy of this book is in the library of The Royal Photographic Society of Great Britain.)

According to the New York Record of 1896 the answer must be in the affirmative. In an article on "Fin-de-Siècle Vidocquism," the following passages occur:

A startling development was made in the Shearman murder case today. A photograph of the murderer has been discovered. Both of Mrs Shearman's eyes are believed to hold pictures of the man who murdered her. Sheriff Jenner and Coroner Bowers on Wednesday discussed the statement often made that the eyes of the dead retain pictures of the last objects on which they rest before the last breath is drawn.
This morning it was decided to proceed on that theory, and taking Fred S. Marsh they visited the Shearman farm. Mr Marsh with his Kodak photographed one eye of Mrs, Shearman, and the form of a man was found there, a big, burly man, wearing a long overcoat, with the cloth of his trousers badly wrinkled. The face of the man was not obtained.

This revelation caused a sensation at the farmhouse. Undertaker Partridge was present and says the photograph of the man's form and clothing on the one eye of Mrs Shearman which was exposed to Mr Marsh's camera was perfectly distinct. It is hoped the other eye will furnish the means of identifying the murderer by giving his face.

Coroner Bowers accompanied Mr Marsh, who is a scientist. They made a microscopic examination of the eyes of Mrs Davis, but on one of those of Mrs Shearman the form of a man was distinctly photographed. The microscope used enlarged the object viewed 400 times its real size. The picture as revealed did not show the face of the man clearly. The man's position was such, according to those who made the examination, that the body was shown only from the breast down to the feet. After the first surprise of the startling discovery made by Mr Marsh was over, he made a most careful examination which clearly revealed the man's form. He was apparently a big man with a long heavy overcoat unbuttoned, and which reached below the knees. The wrinkles in the trousers could be plainly seen, and one foot was behind the other, with the knee bending as if in a stooping posture about to take a step.

Dr Bowers, the Coroner, then made an examination, and says he saw the picture as distinctly as he could have seen a man standing in front of him. E.G. Partridge, Albert Hazeltine, and the Rev. Mr Stoddard who were at the house when the examination was

made, were called into the room and examined the eye, each one of them verifying the statement as describing the man in similar language.

And still the tales kept coming. A London evening newspaper in 1897 claimed that “a certain medicine man” who was also a keen amateur photographer had examined the eyes of “legions” of the dead and had found traces of letters and objects on the iris (sic!) and that these images became more visible by means of photography. In one case a capital letter of peculiar form was revealed, which could be traced to a Testament held in the hand shortly before death.

In another instance a numeral was distinctly pictured, which was traced to a clock face in the room. The Lancelet, a medical journal, immediately responded with a restatement of Kühne’s experiments and the reasons why these images were improbable, even if on the retina and not on the iris. The Amateur Photographer was more practical:

For those who wish to experiment in this gruesome branch of “photography,” the formula presented is as follows: First catch your man, and keep him in the dark for an hour or so. Then expose his eye for a few minutes to an illuminated object, extirpate the organ, open it, and plunge it immediately into a solution of alum. Allow twenty-four hours for development, and dish up any quasi-scientific narrative you please, garnished with sauce a la Grinne!

Such facetiousness did not deter the well-meaning police. When a murder was committed in Yarmouth in 1900, “photographs of the wide-open, staring eyes of the corpse (were) taken in the faint hope that some image of the murderer might be found.”*29*

As late as 1925, the police of the village of Haiger in Germany were alleged to have used photographs of the eyes of a victim in order to solve a murder case. A man named Angerstein was charged with several murders. While examining one of the victims in the morgue the coroner noticed an image in the open eyes of the corpse Photographs of the eyes, the report stated, plainly revealed an image of Angerstein with an ax raised to strike. This case is interesting because Professor Bohne, a scientist at Cologne University, suggested that the report might have a basis in fact. He was well aware that the regeneration of visual purple in the retina would tend to obliterate such an image, but considered the possibility that under a mental or physical shock the image might remain. Suppose, said Bohne, the case of a murderer who kills his victim with an ax. The image of the advancing murderer is reflected in the eyes of the victim. Under such ‘nerve shocks’ the nerve centers of the eyes might lose their power to form new images or obliterate previous ones, “with the result that if the person died at such a moment the reflection might remain fixed in death.”*30*

Whatever the merits of the belief that a murderer left behind at the scene of the crime his portrait in the eye of his victim, the idea was avidly appropriated by writers of

detective fiction. Reportedly scores of stories, plays and books employed this idea in their plots. Jules Claretie, Member of the Academie Française and Director of the Theatre Français wrote a serial novel entitled L'Oeuil du Mort which "is based on some extraordinary experiments made in this country some years ago with a view to the discovery of a murderer by the impression left on the retina of his dying victim's eye."*31* The experiments referred to, which prompted Claretie's story, were conducted by a Dr Bourion "who was practising in the Department of the Vosges." In 1869 a woman and her child were murdered in broad daylight. Bourion arrived on the scene fifty-six hours later, but had their retinas photographed. The results were communicated by him to the Society of Legal Medicine together with a report by his colleague, Dr Vernois: The mother's eyes revealed nothing. The photograph of the child's eye, when enlarged, "plainly disclosed an uplifted arm, with a dog's head distinctly traced above it." No more is know of Bourion or his experiments; he is presumed to have died suddenly, a short time later.

An evening newspaper in London ran a serial during the winter of 1900 and 1901 in which the villain was identified by means of an enlarged reproduction of the victim's retina, even though the picture was improbably made by flashlight in the street. This would not be noteworthy except for the fact that the review in the photographic press*32* was immediately preceded by an announcement concerning a stage version of Rudyard Kipling's Jungle Book. (Kipling was induced to write the stage version by the photographer H. H. Hay Cameron, son of the Victorian photographer, Julia Margaret Cameron.)

Undoubtedly the best written, if not the most interesting, short story to use the idea of retinal imagery was Rudyard Kipling's At the end of the passage.*33* Four men, lonely, bored and suffocating in the heat of India, would meet once a week from their various Empire postings to play bridge and release their tension in irritable gossip. One of them, Hummil, was particularly cantankerous on the night in question. Surly and ill, he drove his guests away, except the doctor Spurstow, who insisted on staying to try and help him. Later that night, Hummil admitted he had contemplated suicide, that he was driven to sleepless despair by a blind face that chased him down corridors. Hummil was convinced that if he was caught then he would die. He was being driven insane. After Spurstow had dosed him with opium, Hummil slept, and awoke fresher the next day. He was then left alone until the next weekly meeting of the group. When the three guests arrived at Hummil's place they found him dead, "in the staring eyes was written terror beyond the expression of any pen." Spurstow noticed something in those eyes. He photographed them. Later that day, the doctor retreated into the bathroom with his Kodak camera. After a few minutes there was the sound of something being hammered to pieces. He emerged, very white indeed. "Have you got a picture?" he was asked. "What does the thing look like?" The doctor replied: "It was impossible, of course. You needn't look … I've torn up the films … It was impossible." "That," said one of the others, watching the shaking hand of the doctor striving to relight his pipe, "is a damned lie."

Footnotes and References

1. Ten years earlier research had been conducted on retinal imagery. See: William Scoresby, “On Pictorial and Photochromatic Impressions on the Retina of the Human Eye,” Transactions, The British Association for the Advancement of Science, 1854, pp. 12–13. Scoresby did not photograph these images.
2. Quoted by William H. Warner in the correspondence columns of The Photographic News, 8 May 1863, p. 226.
3. Ibid., pp. 226–227.
4. Quoted in The British Journal of Photography, 15 June 1863, p. 259.
5. From the Evansville Journal, quoted in The Photographic News, 6 November 1863, p. 535.
6. The British Journal of Photography, 1 January l864, p. 14.
7. The Times, quoted in The Photographic News, 29 January 1861, p. 59.
8. Scientific American, (quoted in The Photographic News, 6 May 1864, p. 223.)
9. The British Journal of Photography, 2 May 1864, p. 158.
10. Harper’s Weekly, 25 February 1865, p. 123.
11. The Photographic News, 6 January 1865, p. 3.
12. The Daily Telegraph, 22 January 1865, quoted in The Photographic News 27 January 1865, p. 38.
13. The British Journal of Photography, 24 February 1865, p. 100.
14. The Photographic News, 24 October 1869, p. 525.
15. The Photographic Review of Reviews, April 1895, p. 136.
16. The Amateur Photographer, 5 June 1885, p. 126
17. Centralblatt der Medicinischen Wissenschaften, January 1877. Kühne said the retina behaves not merely like a photographic plate but “like an entire photographic workshop.”
18. Details of these experiments can be found in several photographic journals of the time, including The Photographic News, 16 February 1877; 18 May l877, p. 237.
19. The Photographic News, 16 February 1877, p. 73.
20. Ibid
21. W.S. Bird, “The Photography of Vision,” The Photographic Journal, 23 May 1879, pp. 93–96. Bird relied heavily on an article in the Revue de deux mondes, March 1879: “Les Colorations de la Retine et les Photographies dans l’Interieur l’oueil.” Bird’s paper was read before The Photographic Society of Great Britain and reprinted in The Photographic News, 30 May 1879, pp. 260–262; 6 June 1879, pp. 265–266. Also: The British Journal of Photography, 30 May 1879, pp. 258–259.
22. The British Journal of Photography, 23 January 1880, pp. 47–48.
23. Quoted in The Photographic News, 20 May 1881, p. 240.
24. The Photographic News, 21 September 1888, p. 608.
25. The Photographic News, 12 June 1891, p. 482.
26. New York Record, 21 December 1894; reprinted in The Amateur Photographer, 11 January 1895, p. 19.
27. Quoted in The Amateur Photographer, 4 November 1898, pp. 869–870.

28. Ibid., p. 870.
29. The Amateur Photographer, 19 October 1900, p. 302.
30. Information Roundup, 1948, pp. 357–358.
31. Daily Telegraph, quoted by The British Journal of Photography, 8 January 1897, p. 29.
32. The Amateur Photographer, 18 January 1901, p: 41.
33. See: Maughan's Choice of Kipling's Best. Sixteen stories selected and with an introductory essay by W. Somerset Maughan, New York: Doubleday and Company, Inc., 1953, pp. 65–2.

Note: The only full photographic retinal image seen by the author was reproduced in Popular Mechanics, July 1934, p. 79. The retina was taken from a woman killed in an automobile accident. The image, of the wrecked car, is astonishingly detailed and, it is said, "helped police working on the case."

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