

DR. W. J. CRAWFORD, HIS WORK AND HIS LEGACY IN PSYCHOKINESIS

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ABSTRACT

This is the first of two articles which are concerned with research in psychokinesis. The second article, to be published later, gives examples of the work done by Kenneth Batchelder and Colin Brookes-Smith, together with a brief account of some current work in the same field. The present article was written partly because of the influence which Crawford had on the two researchers mentioned above, but chiefly because Crawford—if the contents of the three books which he wrote can be regarded as factual—carried out experiments which are among the most significant in psychical research. Evidence for the acceptance or rejection of Crawford's work is discussed. The article also refers to other workers in psychokinesis who were active about the time when Crawford performed his experiments and wrote his books, a resume of which will be found below.

William Jackson Crawford, Doctor of Science and lecturer in mechanical engineering, died tragically in 1920 at the age of thirty-nine after performing what were perhaps the most remarkable experiments in psychokinesis that have been recorded. Dr. Eric Dingwall, at one time Research Officer of the S.P.R.—and by no means a lenient critic of what he considered to be careless work—did not approve in some respects of the way in which Crawford had conducted his research: yet he had this to say of him (Volume 32 of the Proceedings of the S.P.R. 1921–1922) 'The works he has left can scarcely fail to be regarded in the future as the most important contributions towards the study of telekinesis which have appeared up to the time that their author met his untimely end'.

1. PSYCHOKINESIS IN THE EARLY DAYS OF PSYCHICAL RESEARCH

In the early nineteen-thirties it appeared that science might be on the brink of making a substantial advance in the field of psychokinesis. It was demonstrated by Dr. Osty in 1931 that Rudi Schneider, while paranormally moving a target-object guarded by a network of infra-red beams, caused a partial interruption of the infra-red—sometimes by as much as seventy per cent—although flashlight-photography showed nothing visible that could have caused the absorption. Osty's findings were confirmed by a number of other researchers. The theory that a mysterious emanation from certain people had the power to affect matter at a distance seemed close to validation.

Yet after this there was a period of some forty years during which there seemed to be an almost complete lack of interest on the part of parapsychologists in physical psychic phenomena. It was not until 1973 when Uri Geller was seen on English television to bend spoons in an apparently paranormal manner that there arose a fresh interest in the subject.

Since that time there has been some very interesting PK research in a number of countries; in England notably by Professor John Hasted and Dr. Julian Isaacs. But I think it would be true to say that there are not many parapsychologists who are conversant with what was done in this area in the early part of the 20th century and in the late Victorian period. There is probably still a general feeling

that this early work is suspect and not worth studying. What happened with Rudi Schneider might be accepted as valid, with its careful scientific verification, but the research in the field of materialisation done by Schrenck Notzing—and other savants such as Geley and Richet—seems to most modern parapsychologists to have produced such outrageous results that they almost certainly were due to fraud, poor observation or lax experimental control.

A generation or two earlier, and before the formation of the Society for Psychical Research, William Crookes F.R.S., one of the greatest chemists and physicists of his time, in his work with Daniel Dunglas Home, was convinced that he had found a new force in nature: and to the end of his life, when he was Sir William Crookes, past president of the Royal Society, he declared he had not changed his mind.

The psychic force which he claimed to have discovered appeared to have had little interest for the scientists of the day. This may not surprise us, but stranger than this was the lack of interest evinced by most of the members of the S.P.R. in the physical phenomena of mediumship in the early years of the Society. Some of these phenomena may have appeared vulgar and distasteful, but that did not prevent European and American researchers from investigating them.

From 1890 to 1910 the Italian medium Eusapia Palladino produced psychokinetic phenomena which were adjudged not to be fraudulent by some of the most respected scientists in Europe, using the strictest methods that could be devised.

Finally in 1909 the S.P.R. were persuaded to send to Naples to investigate Eusapia three of their members who were experienced in exposing fraudulent mediums, two of them expert conjurors. The investigation was extremely thorough and resulted in a report of 206 pages. The S.P.R. researchers had been completely convinced that they had witnessed genuine telekinetic phenomena.

It is necessary to stress the quality of those who, at this time, studied physical phenomena. Besides the three men I have just mentioned, the Hon. Everard Feilding, Hereward Carrington, and W. W. Baggally, there were in Europe a number of men of considerable scientific attainment who undertook investigations of physical mediums.

The three best known among them I have already mentioned; Baron Von Schrenck Notzing, Professor Charles Richet, and Dr. Gustave Geley, all men of medicine. Schrenck Notzing, who had private means, spent a number of years in this field of research, and even that stern critic, Eric Dingwall, testified to the excellence of his experimental procedure (and moreover admitted that he himself had observed genuine phenomena). Charles Richet was a distinguished psychologist and physiologist, winner of a Nobel Prize. Gustave Geley became the Director of the Institut Métapsychique in Paris.

All of them had a particular interest in materialisation, and of other eminent contemporary researchers the same could be said. They include Aksakov, Bozzano, Flournoy, Lombroso, Morselli, Ochorowicz, Osty and Zollner. These men were not simple credulous Spiritualists. Most of them came to the subject with deep scepticism, and suspicion of mediumistic fraud was evident in all that they did. And yet, sooner or later, all of them were convinced that materialisation was a fact in nature, and were not afraid to say so in spite of the risk of losing their academic respectability. Several of these researchers achieved conviction

through the mediumship of Eusapia, but others were more occupied with systematic investigation of Marthe Béraud.

In the book 'Phenomena of Materialisation', which was chiefly concerned with phenomena produced by this medium, Schrenck Notzing refers to similar phenomena which had been observed by Dr. Geley in the presence of Marthe, and which he describes in his book 'From the Unconscious to the Conscious'.

'Dr. Geley reproduces a number of photographs of materialisation phenomena which Eva C. (Marthe Béraud) obtained in 1918. . . . The first two pictures demonstrate the amorphous substance which developed under Geley's eyes. The other pictures give representations of faces and heads developing out of this substance. . . . Some of them were formed from a solid core of matter emerging from the medium, or from a nebulous substance, the condensation of which could be observed. Considerable amounts of the original cord, and the primary matter, remained on the original materialised structures. Geley convinced himself by the eye, by the touch, and by stereoscopic photographs, of the three-dimensional character of these formations. . . . The usual precautions were carried out in Dr. Geley's laboratory in a very strict manner.'

These included the undressing of the medium in the presence of Dr. Geley, and dressing her in a one-piece seance costume which was sewn up at the back. Her hair and her mouth were examined, and when she had taken her seat on a wicker chair her hands were held and were always visible.

Geley had many sittings of this nature, and in speaking of them he declared 'I do not say "there was no fraud during these sittings"; but I say "the possibility of fraud was altogether excluded". I cannot repeat it too often: the materialisations were always produced before my eyes, and I observed the whole genesis and development with my own eyes.'

Professor Richet, in his book, 'Thirty Years of Psychical Research', stresses that his experiments with Marthe exactly paralleled the experience of Dr. Geley. It was emphasised that the materialisations appeared to have a life of their own, in that they exhibited purposive movement independent of any movement of the medium.

This is not to say that there was no connection between the materialised structure and the medium. The ectoplasm—the name which Geley gave to the exteriorised material—was sometimes described as ideoplastic. The shapes into which it was manipulated were thought to originate in the unconscious or conscious mind of the medium.

When the materialisation research of nearly a century ago is considered only a subjective judgement can be made. Therefore all I can say is that, in view of the initial scepticism, combined with the expertise and perseverance of the researchers, and the agreement of their results, I find it impossible to ignore their findings.

In brief, these findings indicated that ectoplasm was a material which was connected with the medium, but which existed in different stages of condensation. In the case of Home, for example, it was invisible—nothing could be seen between him and a materialised hand some distance away. On the other hand, sometimes a small mist-like patch was seen to appear apart from the medium. This was the second stage of the phenomenon. In this tenuous smoke-like state it

was on occasion seen issuing from the mouth of a medium and penetrating the veil with which the experimenters had covered the whole of her face.

From this there might develop a strip of lace-like material, which, however suspicious it looked, under a lens exhibited 'no signs of the loom'. In other words it did not appear to be an artefact. Then cords of varying thickness might appear, dense enough to be held in the hand—the third stage. After this, out of the materialised matter could appear structures of diverse kinds, usually parts of a human body—faces in particular. Hands, too, were often seen—sometimes perfect and sometimes crudely fashioned. Eusapia's speciality was the development of pseudopods, ectoplasmic limblike extensions which issued from her body.

The various stages which I have mentioned were not always observed. Sometimes a fully-formed materialisation might appear instantly and disappear at equal speed. A complete human figure was a rarity, although often reported as manifesting in Spiritualistic circles.

There is one researcher whom I have deliberately refrained from mentioning so far, but who, in my opinion, was responsible for the most intriguing series of experiments which have been performed in the field of parapsychology. These experiments I would describe as unique, and I am careful in the use of this much abused adjective.

I refer to the work of Dr. W. J. Crawford which was done some seventy years ago. My conviction that this research was of considerable importance was established when I asked Colin Brookes-Smith, then whom few parapsychologists had a better knowledge of the history of psychokinesis, for his evaluation of the experiments in question. He stated that he believed the experiments had taken place as described, although he did not share Crawford's belief that the phenomena which he observed were brought about by 'unseen operators'.

During some six years of research Crawford wrote three books which describe in detail the systematic series of experiments which he conducted. To describe this work adequately would demand a book of its own, but I will do my best to give a short summary of what was done.

First I want to say something about the evidence of those who witnessed the phenomena which were produced in the course of research. Some of those who doubt the veracity of Crawford's account of his experiments complain that only a few of the witnesses who were sometimes present were named. However we are fortunate in having the evidence of two eminent researchers, and this can be read in a single copy of the proceedings of the S.P.R. dated July 1919. From this I will quote from a report which Sir William Barrett F.R.S., one of the founders of the S.P.R., read to its Council on 8 January, 1916.

'Dr. Crawford, lecturer on Mechanical Engineering at the Queen's University and Technical College, Belfast, has for several months been investigating the remarkable physical phenomena which take place in a small family circle of working people in Belfast. The medium is the eldest daughter, Kathleen, a girl of about 17. Dr. Crawford has described in "Light" the very interesting mechanical arrangements he had devised to test the weight of the medium simultaneously with that of the table which is levitated, and also of the forces apparently emanating from the medium, and has determined the direction as well as the amount of these forces.'

'Through Dr. Crawford's kindness I was permitted to join the circle in Belfast, during the Christmas vacation 1915, and was allowed to bring with me a medical friend, Dr. W., who kindly consented to make any pathological or physical examination of the medium that might be necessary.

The sitting took place at the residence of the medium's family, a small upper room having been regularly used for the sittings. This room was lighted by an incandescent gas burner, and a flat flame gas burner inside a lamp with a large pane of red glass on the side facing the circle. The circle of seven persons sat round a small table and each clasped hands with the adjoining sitter. We sat just outside, and close to, the circle. After some hymns had been sung, the gas burner was turned off, and the red light illuminated the room sufficiently to enable us to see the sitters and the table. The gas flame inside the red lantern was at my request subsequently raised, so that there was quite enough light to see the objects and sitters in the room. A tin trumpet stood below the table: the latter had four legs, with no cross-bars on two sides, but a cross-bar between the legs on the two shorter sides, away from the medium.'

'Knocks soon came and answered questions. Three knocks for yes, two for doubtful, and one for no. Messages were also slowly spelt out by repeating the alphabet aloud, a knock coming at the right letter. The knocks appeared in some cases to come from the table, at others from outside the circle. Suddenly a very loud knock came in response to a request, and was repeated with violence. Dr. W. asked for it to be still louder, and a tremendous bang then came, which shook the room and resembled the blow of a sledge-hammer on an anvil. After the sitting we examined the feet of the sitters and all had felt slippers on, except one who had light shoes, and none could have produced these sounds with their feet.'

'The trumpet below the table then began to move about, and the smaller end poked itself from under the top of the table towards Dr. W. and myself. We were allowed to try and catch it, but in spite of all our endeavours it eluded us, darting in and out and changing its position as we tried to seize it. The medium was on the opposite side of the table to us, and all the circle held up their hands—so that we could see each linked hand clearly—as the trumpet played hide and seek with us.'

'Then the table began to rise from the floor, until it reached a height of some twelve or eighteen inches, and remained thus suspended and quite level. We were allowed, first myself and then Dr. W., to go beneath the clasped hands of the sitters into the circle and try to force the table down. This both of us found it impossible to do; though we laid hold of the sides of the table it resisted our strongest efforts to push it down. I then sat on the table when it was about a foot off the floor and it swayed me about, finally tipping me off.'

'We then returned outside the circle, when the table turned itself upside down and moved up and down with the legs uppermost. Again we entered the circle, and tried to lift the table top from the floor; but it appeared to be rivetted, and were unable to stir it. When we resumed our place outside the circle, the table floated up and turned itself over again with its right side uppermost. During these experiments and whilst the table was levitated, all the sitters repeatedly held up their clasped hands, so that we could see no one had any contact with the table; they were in fact so far from it that we could walk between them and the table.'

'Other knockings came, and then the knocks bid us good-night by rapping two or three times to each person in succession, particularly loud knocks being given to Dr. W. and myself.'

Sir William represented the older generation of the S.P.R.—he was seventy when he wrote the above report; but if it is thought that his age had affected his powers of observation, there is evidence to the contrary in an article in the same issue of the Proceedings written by Whately Smith (who later changed his name to Carington). He was only half the age of Sir William, and one of the most assiduous of the psychical researchers of the time, when in December 1916 he visited Dr. Crawford's group and experienced phenomena if anything more remarkable than those reported by the older man.

Whately Smith's article is about ten times the length of that of Sir William Barrett and deals not only with his own experience, but also discusses Crawford's first book, 'The Reality of Psychic Phenomena', which had recently been published. He stated that he was completely convinced of the genuineness of the phenomena which he had observed and which had been described in the book.

During the next few years two further books were written, 'Experiments in Psychical Science' and 'Psychic Structures'. I will now try to give a brief summary of the contents of the three books.

The experimental group consisted of the medium, Kathleen Goligher, five members of her family and a brother-in-law, all of them dedicated Spiritualists. I don't think Dr. Crawford would have called himself a Spiritualist, but he became convinced that the paranormal movements which he observed and measured were effected by what he called 'unseen operators' who collaborated closely with him.

In his book, 'The Reality of Psychic Phenomena', Crawford describes eighty-seven experiments in detail. He writes that, before he began his experiments, 'I had seen the table floating in the air, as it were, off and on, for a period of over a year; and often I had wondered if the reaction was on the floor immediately below the table, or if it was on the medium herself, or if it indeed was located in neither of these positions'.

He had satisfied himself that none of the sitters were physically responsible for the levitations. That is to say, none of them were touching the table. They sat in a circle round it, holding hands or with their hands on their knees. The light was sufficiently good for Crawford not only to be able to verify this, but also to verify that their feet did not touch the table—with one exception. It was difficult to see the feet of the medium which were in shadow, but it seemed impossible that any movement of her feet could be responsible for the remarkable movements of the table; and many subsequent experiments showed this to be the truth.

The first few experiments were designed to establish whether or not the reaction of the levitated table was upon the medium. Kathleen Goligher was seated on a weighing machine, borrowed from W. & T. Avery Ltd. In addition to the usual seance table, weighing 10lb 8oz, two lighter tables of about 6lb, and a stool of about 2lb 12oz were used. It was found that when the tables and the stool levitated, the weight of the medium increased by nearly the weight of the object levitated—usually just a few ounces less.

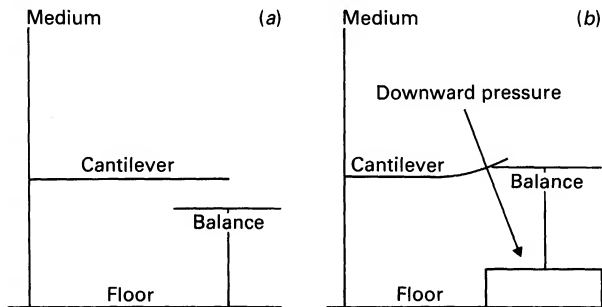
In the case of the stool, Crawford writes, 'The levitation of the stool was the

most spectacular case of the phenomenon I have seen. So high was the stool in the air, it is no exaggeration to say that if I had bent my head I could have walked right under it from one side of the room to the other.' If this was so, it seems clear that no member of the group could have been physically responsible for the levitation in view of the gas lighting which was provided.

It appeared that most of the force or, it would be more correct to say, ectoplasm, involved in the levitations originated in the medium, but that a very small percentage was provided by one or more of the other sitters, and this was confirmed by experiment.

Most remarkably, in all the series of the experiments, levitations and other movements of a paranormal nature were obtained as soon as asked for, unless there was some particular difficulty. Also, it was usual for ample time to be provided for measurements to be made.

Experiment 19 was a particularly important one, and it is worth mentioning that it was carried out in Crawford's own house. During one powerful levitation of a table when he entered the circle, while attempting 'to press it down vertically to the floor, I felt an elastic resistance . . . I then thought of pushing it inwards towards the medium. I was much surprised to find that the resistance to push it in that direction was not an elastic one, but one of quite a different order. The resistance was a solid or rigid one, and as a matter of fact the table appeared to be "locked".' This experiment helped Crawford in the formation of his theory that a kind of cantilever structure was used in the levitations of at least some of the tables.



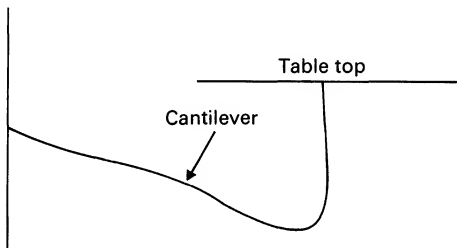
In later experiments it was found, by the use of a compression balance, that when the normal seance table was levitated there was no reaction on the floor. As the balance was progressively raised, at a point not far from the floor, pressure suddenly began to be exerted upon the balance in a dramatic manner—far more than could be accounted for by the weight of the table. Further experiments showed that, with this increase of vertical downward pressure upon the balance, there was a lateral pressure upon it away from the medium, and there seemed to be a relation between these two forces—when there was an increase in one, there

was also an increase in the other. Crawford believed that this indicated some sort of cantilever structure, anchored as it were in the medium. He demonstrated this as follows, using diagrams similar to the two on the previous page.

(a) shows the balance in a position too low to have any influence upon the cantilever. But in (b) when the balance is raised, it presses the cantilever—which has a certain degree of flexibility—in an upwards direction. The balance registers a considerable weight, and there is also a small lateral pressure upon it away from the medium.

In experiments 59 and 60 Crawford constructed a very delicate electric contact mounted on a short strip of wood, and then placed it in an electric bell circuit. He found that when he moved the contact-maker between the medium and a levitated table there was a particular point where the bell rang and the table immediately dropped. This indicated two things; first that the contact-maker was cutting across a link which connected the medium to the table, and secondly that there was mechanical pressure from the medium to the table.

By a number of experiments with the contact-maker and the compression balance Crawford came to a provisional conclusion that the shape of the psychic cantilever was something like a letter V, as shown below.



The next subject to which Crawford directs his attention is that of raps. By measuring the weight of the medium seated on the weighing machine while raps were being made, it was found that Kathleen progressively lost weight as the rapping continued, and this loss continued until the loudest sledge-hammer raps were given, when the weight became stationary. Eight pounds had been lost, but after the cessation of the raps there was a restoration of her normal weight. It was then found by experiment that 'the intensity of the rap depends upon the decrease of weight and is apparently directly proportional to it'. From these experiments it was deduced that 'the loss represents actual matter temporarily detached from the medium used in some manner in the production of raps, blows, etc.'

As a result of the experiments which he had done, only a few of which I have described, Crawford formulated what he called 'the rod theory'. He writes, 'The rigidity of the psychic rod is due in some way to material particles temporarily projected from the medium. So soon as a rod is formed, its free end rests on the floor, i.e. part of the body of the medium is supported on the floor beyond the weighing machine on which she is seated; she thus apparently loses weight. The

thicker the rod the more of the matter of her body is thus externally supported: and, as the thickness of the rod determines the intensity of the rap, her apparent loss of weight is thus proportional to the intensity of the blow.'

At the beginning of the final chapter of the book, entitled 'General Conclusions' is the following. 'The principal characteristics of a rod are as follows: (1) It is capable of being pushed straight out from the body of the medium. It has not an indefinite limit of extension, but its end can reach, under favourable conditions, to a distance of about five feet from her body, and can there act on the table and move it about. . . . The medium's end of the rod, as it is pulled back into her body, is absorbed in her: perhaps the rod is ultimately made up of great bundles of thread-like projections, and the whole rod is anchored to her like the roots of a tree. (2) The rod is capable of to-and-fro motion horizontally over a considerable arc, and can thus move bodies about within the circle formed by the sitters; it has also a limited motion in a vertical plane. (3) The rod, while capable of in-and-out movement from the medium's body, can be fixed or locked at any required position, within its limits of extension, so that in such position it becomes a cantilever. (4) The rod can transmit pulling and pushing forces. (5) The free end of the rod is capable (at least sometimes) of gripping bodies by adhesion. (6) All the motions of the rod are worked from within the body of the medium. (7) The dimensions of the rod can vary greatly: its cross-section may have different values, and various modifications can be made of the shape and condition of its free end. . . . Nevertheless, whether for levitation, rapping, or other phenomena, a rod-like projection is always used, though this projection may assume special forms and shapes, and have special terminal modifications, and have different degrees of flexibility and stiffness to suit the production of different phenomena.'

The remainder of the chapter deals mainly with the composition of the rod. After referring to a number of his experiments, Dr. Crawford writes, 'Taking everything into consideration, my basic idea of the rod-projection is this: It consists fundamentally of a bundle of very fine threads thrust out from the body of the medium, which are practically transparent and hence invisible, the threads being intimately connected and touching and adhering to one another. . . . These threads, in the manner of those observed during Dr. Schrenck Notzing's experiments on materialisation, can move and twist about by forces applied to them from within the body of the medium (possibly they are directly connected to the nervous system of the medium by nerve filaments or in some other way): the threads are gradually projected to the space beneath the table, and their free ends are attached to its under surface. When this has been attained a force is applied along their axis gradually and uniformly with the result that the system of threads (or cables, it would perhaps be well to call it) is gradually stiffened and becomes a rigid girder projecting from the medium and able to levitate the table.'

The nature and action of the rods is the chief subject of the next two books. Unfortunately, considerations of space forbid detailed descriptions of the experiments which show that if a very considerable weight was levitated the floor underneath the levitated table or other object took part or all of the weight by means of a psychic strut. Otherwise too much stress would be exerted upon the medium. Similar struts were used when strenuous attempts were made to push a

table towards the medium. It is, of course, extremely strange, to say the least, that when even a light table was levitated, the medium felt as little reaction as she appeared to do.

The solution of the mystery obviously involves the nature of the substance which was exteriorised from Kathleen to form the structures through which flowed the force which was necessary to effect the manifestations which Crawford observed.

At this stage of his research, as the result of his experiments Dr. Crawford had become convinced that, in addition to this substance from the medium's body, some kind of energy was supplied, not by the medium, but by the sitters who composed the experimental group. He writes, 'This energy seems also to be associated with matter, but not the kind of matter which is used to build up the structures. For the matter associated with the energy is a permanent loss. It is also very much less in quantity than the temporarily borrowed structure-matter. I have every reason to believe from a long experience of the seance-room, that a physical medium is a person whose physical organism is capable of supplying temporarily quantities of this structure-matter, and that a good sitter is a person who can supply a quantity of energy-matter.'

'In other words the function of the medium is to lend from her body psychic matter, and the function of the sitters is supply psychic energy. The reader will therefore understand that it is necessary to have at a circle a number of sitters, so that a sufficiency of this psychic energy may be available.' A number of experiments had shown that, during a seance, each sitter was likely to lose, at most, a few ounces of weight permanently. The medium usually lost the least weight of this permanent kind.

Much of the first part of Crawford's third book, 'Psychic Structures' is concerned with experiments in which raps were made upon soft clay or putty which had been placed under a table in the circle. It was found that 'the operators can, on request, make various marks on the clay, which marks are permanent and afford an indication of the shape and characteristics of the rod end which produced them'.

Sometimes, while the raps were being made, Crawford would place one of his hands in the vicinity of the psychic rod which he believed was causing them. He found that 'each psychic rod in the neighbourhood of its extremity was solid, i.e. built up of matter solid to the touch, and therefore presumably of matter with which we are ordinarily familiar. . . . From a distance only a few inches from its extremity right up to the body of the medium, all appearance of solidity vanished and nothing could be felt in the line of the structure but a flow of cold, spore-like particles.'

'In other words, the solidity seemed to change to something resembling a gaseous state. Nevertheless the whole rod, apparently made up of a solid end and a gaseous body, operated exactly as if it were wholly solid from the body of the medium outwards. It resists pull, push, and shear stress of large magnitude. . . . The question arises as to how and where, with reference to the body of the medium, the materialisation or solidity of the rod termination is effected.'

Most of the remainder of the book consists of an attempt to answer this question. Crawford writes, 'As the free end (of a psychic rod) is, for all practical purposes and for the time being, an ordinary solid body; and as it has been shown

to possess adhesive and suction qualities, it is reasonable to assume that, if the opportunity were presented, particles of suitable substance would adhere to it if such were placed in contact with it. And furthermore, if, when the rod was pulled into the body of the medium, dematerialisation occurred just before entering the body, that such foreign matter, adhering to the solid end of the rod, would, on dematerialisation, be deposited at the spot where it occurred, and give important data as to the point of issue of the rod.'

Crawford's next experiment indicated that his reasoning had been correct. He tied Kathleen's ankles tightly with whipcord to the back rail of her chair, and placed a dish filled with extremely soft clay under the table. He then asked the operators to do anything that would be helpful in solving the problem of the rods. He writes, 'There was a considerable amount of clay found on certain parts of both shoes of the medium, on her stockings, and on the whipcord with which her ankles were tied'.

It was also found during experiments that tiny pieces of matter had been deposited upon the clay in the dish, and that these 'were identified as coming (a) from the medium's stockings; (b) from the furry lining inside the tongue of her shoe; (c) from the laces of her shoes'.

Numerous subsequent experiments confirmed that when a psychic rod emerged from the medium and made impressions upon soft clay some distance away, it carried with it particles of matter from the medium's clothing; and that when the rod returned to the medium it took with it varying amounts of clay which were found upon the shoes and stockings of the medium.

Earlier experiments had caused Crawford to believe that the plasma (as he sometimes described the substance which composed the psychic rods) had its origin in the vicinity of the ankles of the medium. However, an important stage in the research was reached when particles of clay, so small that a lens was necessary to see them, were found to reach to the top of her stockings.

Soon after this Crawford began to use powdered carmine to try to determine the origin of the plasma. He quotes an article which he wrote in 'Light'. 'I have discovered that plasma has the property of adhering strongly to a substance such as powdered carmine, and that if the carmine is placed in its path it will leave a coloured track. For example, slightly damp carmine may be placed on any part of the medium's clothing in the vicinity of the place in her body whence the plasma is thought to issue, and the carmined path of the plasma, as it issues, will be left.'

A number of experiments were done with the use of carmine. In some of these experiments, with Crawford's wife supervising the placing of the carmine upon the medium's underwear, it was established that 'plasma issues from the trunk as well as returns thereby'. Elsewhere, instead of 'trunk' the expression 'join of the legs' is used.

Moreover, 'When the medium had carmine in her boots and shoes, particles or small patches of the dye were often found on the table legs, on the floor, or on articles touched by the structures. As a rule the amount of carmine so deposited was slight and not comparable to the quantities on her stockings.'

'In order to obtain data concerning the shape of the end of the structures and also, of their methods of gripping the table, I often covered the under-surface and legs of the table with soot, obtained from a turpentine lamp. It was soon found

that there were two chief methods of levitating the table, viz. from the under-surface and by the legs.' When the latter was the case, 'the marks showed that the gripping substance in most cases went round the legs, just as though some kind of a tentacle had wrapped itself right round.'

There was great difficulty in obtaining photographs of the phenomena, chiefly, it seemed, because of the adverse effect that the necessary flashlight had upon Kathleen. 'Nor is this to be much wondered at' writes Crawford, 'when it is considered the plasma is part of her body exteriorised in space'. However, success was finally achieved, and at the end of the book are to be found twenty-six photographs of the exteriorised plasma, most of them showing the material coming from the medium to a table in single or double columns. Crawford is careful to say that the plasma in the photographs is in an unstressed state, because if stress had been introduced to induce the rigidity necessary for levitation, the reaction upon Kathleen would have been too severe.

It has been said that the matter which is seen in these photographs is extremely like some man-made material. However, matter which looks remarkably similar to that in the photographs appears in other photographs of physical mediums who have been believed genuine by competent researchers. For example, it was Schrenck Notzing who, examining the suspicious looking material issuing from Marthe Béraud with a lens, declared there 'were no signs of the loom'.

It is easy to sympathize with those who doubt the reality of ectoplasm. I find it difficult to believe in this substance and its exteriorization myself. On the other hand I find it rather more difficult not to believe in some of the evidence which was produced nearly a hundred years ago. I am referring not only to Crawford's work, but also to that of others whom I have mentioned earlier.

Crawford's research is in a class of its own. At least, I have found nothing like it in the history of psychical research. It seems too good. The man appears to have had none of the troubles that other researchers of physical phenomena did. It is true that he needed years of persistence as did they but, unlike them, suffered from no 'shyness' effect, no exasperating evasiveness on the part of the phenomena. He went steadily along systematically conducting successful experiment after successful experiment, like the good mechanical engineer he apparently was. Kathleen Goligher seems to have been one of the really great mediums, and the circle composed of her family could not have been more helpful. And yet the contents of Crawford's three books are such that, as Mary Rose Barrington says in the S.P.R. 1982 volume 'Psychical Research', it is tempting to dismiss Crawford's research 'as an elaborate fantasy clothed in the garments of mechanical engineering'. She does not dismiss it, however, because of the evidence of some witnesses who identified themselves—particularly Sir William Barrett.

Could some kind of fraud provide an answer to the mystery? After Crawford completed his book 'Psychic Structures', but before it was published, he took his own life on July 30th 1920. In a letter dated 3 July 1920 he describes some of his latest experiments—which were successful—and continues, 'When I review the work of the year I am satisfied. The development of the power to photograph the plasma and the structures has been wonderful. I persisted with the photographs for six months or more without any success to speak of, and then suddenly it

came. Also the use of luminous screens has been a great advance. Meantime we have decided to stop for some holidays. I feel a bit "done up" and need a rest.'

On 14 July he wrote, 'My own impression is that there will be more seances. However, for this and next month there will be a blank, so that everyone concerned may have a good rest.'

But on 26 July comes the following; 'I have been struck down mentally. I was perfectly all right up to a few weeks ago. . . . It is not the psychic work. I enjoyed it too well. I am thankful to say that work will stand. It is too thoroughly done for any material loopholes to be left.'

After Dr. Crawford's death there was a suggestion that he had discovered that the Goligher group was fraudulent, and that this had been the reason for his suicide. It would be difficult to find an indication of this from the letters I have quoted above, but there was what amounted to an accusation of fraud the year after his death, when Dr. Fournier d'Albe conducted a series of twenty seances with the intention to obtain, if possible, 'an independent confirmation of his results and theories, and to collect further data concerning the nature of these marvellous manifestations'.

Fournier d'Albe knew a good deal about physical psychic phenomena. He had witnessed phenomena produced by 'Eva C.', and had accepted them as genuine. Moreover he knew Schrenck Notzing and had translated the latter's monumental book, 'Phenomena of Materialisation'.

His experience during three months in 1921 was, to say the least, disappointing. In his book, 'The Goligher Circle', his conclusion that there had been fraud is obvious. A number of strange-seeming manifestations had been observed, but of these he writes, 'I am satisfied that all the phenomena I witnessed myself were produced by normal physical means'. From his description of the series of seances which he conducted there would appear to have been grounds for suspicion of fraud, although proof was lacking.

There may, of course, be another possible explanation for the lack of success of the seances. Could d'Albe have been one of those unfortunate people who, however well meaning and efficient, unintentionally produce experimental conditions which bring about negative results?

However this may be, Dr. d'Albe seems to have been a fair-minded man, and had no objection to the inclusion in his book of a substantial appendix which contained not only accounts by Crawford of some of his later experiments, but also the testimony of a number of witnesses who had attended his seances and had been convinced of the genuineness of the phenomena which they had seen. If human witness has any value it seems extremely improbable that fraud could have accounted for all that they had observed.

In Dr. d'Albe's seances, because of the lack of adequate illumination, he could never be sure that one or more of the circle was not manipulating the table with hand or leg. But in the case of seances with Dr. Crawford it was often emphasized by witnesses—who included, incidentally, the president of the Glasgow Society of Conjurors—that the lighting was such that, if fraudulent contact had taken place, it would certainly have been detected.

In the journal 'Two Worlds' of 30th November 1917 there is an article which describes the experience of E. W. Oaten, the president of the Spiritualists National Union, during his visit to the Goligher circle. Spiritualists such as Mr.

Oaten must not be thought naive and credulous. They were as anxious as the most enthusiastic materialist to expose fraud, which caused much damage to their cause, and the president of the SNU had a great deal of experience in witnessing in a critical spirit alleged physical psychic phenomena. The following is an extract from his article: 'I was invited to enter the circle, and having divested myself of my coat, I slipped beneath the joined hands of two sitters, eager to test the strength of the power at work. May I interject that I am a fairly strong man. I can lift 1 cwt in each hand, or carry a sack of flour. The table now rose some 12 to 14 inches, and remained stationary while I carefully looked all around and under it. I satisfied myself that there was no physical contact whatever. It was some two feet from the medium, and I saw her feet resting upon the floor, whilst her hands were linked with those of her neighbours. She seemed to be perfectly at rest, and was, in fact, smiling at my examination. I stood now at the end of the table opposite the medium, and endeavoured to push the table towards her with a horizontal push. I secured a good leverage, and pushed with all my strength, but made not the slightest impression upon the table. It was rigid, and the resistance was that of a *solid* body. I could tilt the top of the table towards the medium, and in a lesser degree the extremities of its legs, and it appeared to me that the resistance was fixed some six inches from the bottom of the two legs nearest the medium. The resistance in the horizontal plane was as solid as a wall, though normally I am satisfied that I could push the medium in her chair, with the table added, around the room.'

'I next tried to pull the table (which still remained suspended) *from* the medium, and experienced an elastic pull which seemed to decrease the farther I pulled it. I *think* I could have pulled it completely free, but I did not want to stop these phenomena, but simply to examine them. I estimate the strength of my push at something over 120 lbs., and of my pull at perhaps 30 lbs.'

'The table now sank to the floor, and I tried to twist and wriggle it towards the medium, but to no purpose. I was stretched out, using my utmost power, and again standing over the table trying to lift and push, but not one inch could I move it, though the table creaked under the strain.'

'Standing now at the side of the table, so that it stood between myself and the light (the medium being on my right) the table again rose some seven or eight inches. I saw the medium's boots resting on the floor, the greater part of them protruding beneath her dress. Whilst my hand rested on the levitated table, I pressed down, and found an elastic resistance. I clenched my fist and struck its surface—it yielded to each blow, and sprung up to meet the next, as though suspended on a spring, until it acted like a bouncing ball, leaping up to meet my hand after each blow, though it never apparently touched the floor. When the blows were nearest the medium the resistance was greatest; when farthest from her the elasticity seemed greater. These phenomena certainly seemed to agree with Dr. Crawford's hypothesis of a cantilever projecting from the medium and contacting the table about six inches from the bottom of the legs. I must insist, however, that the most careful scrutiny of eye and hand failed to show any contact on the part of medium or sitters—my sight is well above the average'.

The above extract comprises less than one third of the article, which nowhere suggests doubt as to the genuineness of any of the phenomena which presented themselves.

Mary Rose Barrington, a distinguished parapsychologist, has described the account of this sitting as 'rivetting', and it is difficult to disagree with her. How is it possible to square the experience of Oaten with that of Fournier d'Albe? It may be that the answer lies in what has been called 'the psychology of suspicion'. Mr. Oaten had a wealth of experience of what were claimed to be physical psychical phenomena. He knew that some of them were fraudulent, but he was convinced that many of them were not. From what he had heard and read about the Goligher circle he was optimistic regarding its honesty. He came with a critical, but hopeful, eye. The same could be said of d'Albe, but he did not possess the wide experience of the other man, and perhaps he made it fairly obvious to the group that he was continually looking for the possibility of fraud. This could have inhibited the production of phenomena.

I have suggested that he might have been one of those unfortunate researchers in whose presence the production of unambiguous psychic phenomena is almost impossible. I am inclined to think that the psychological conditions of the sittings were such that if anything paranormal could manifest, the lighting had to be kept very low, with the result that d'Albe complained he could not see clearly whether or not the table was touched by any members of the circle: whereas those of much greater experience in research, such as Sir William Barrett, Whately Smith and Ernest Oaten, by putting the group at ease, enabled phenomena to appear in a light which was sufficient to convince them that nobody was touching the table, or any other object which moved in an apparently paranormal manner.

Perhaps upon reflection some time later, d'Albe realised what might have caused the unhappy outcome of the sittings. It may be significant that, in a letter to John Beloff dated 4 November 1963, Horace Leaf wrote, 'I knew the Golighers before I knew Dr. Crawford, and know the facts about their dispute with Dr. Fournier d'Albe when they terminated their sittings with him. He asked me to persuade them to resume, but the brother-in-law, who acted as leader of the family in such matters, refused because he objected to d'Albe's attitude and method.'

As one result of d'Albe's book, it was reported in *LIGHT* that in the 12th edition of the *Encyclopedia Britannica* (1922), in an article on psychical research was the following: 'The Goligher case appeared to provide the most impressive evidence ever obtained for the reality of "Materialisation". Dr. Crawford's premature death in 1920 made it temporarily difficult to pursue independent inquiry into the matter; but at the end of 1921 further investigation by Dr. Fournier d'Albe proved that the manifestations were fraudulent.'

The author of this article had not seen—or had ignored—an article in *LIGHT* on 5 March 1921 by F. McCarthy Stephenson. He described a sitting of the Goligher circle conducted by Dr. Crawford at which he had been present about two years previously, and where he had experienced phenomena extremely similar to those which Mr. Oaten had experienced in 1917. Mr. Stephenson was so impressed by what he had seen that, almost immediately after Crawford's death, he made an attempt to continue the research. A test experiment was made on 6 September 1920, and a detailed description of this was published the following month in 'The Psychic Research Quarterly'. In the *LIGHT* article he gives a brief account of the experiment. 'There were five cameras, in the charge of Mr. Pollock, a professional photographer of Belfast. I stood close to Miss

Goligher's chair, as can be seen in the photographs. The members of the circle were thoroughly searched before entering the room, which was one set apart in his house by Dr. Crawford for this work. Amongst those present were Mrs. Crawford and two lady doctors. There were four exposures; the first one was a blank, the three others gave 15 pictures of the plasma. One camera, with wide angle lens, was placed close to the medium's feet, and the results of this camera were in excellent focus—see illustration. (The photograph shows an amorphous mass of material between Kathleen's feet.) The warp and woof of the stockings are easily distinguished, but no trace of structure can be made out with any magnification of the mass.'

'The last of the four exposures was taken while the red light was on. I saw the emanation before it was photographed, as did also one of the lady doctors; to this she has certified in writing. I may say that with Dr. Crawford's photographs generally, and with all but the last one taken at the seance arranged by me, the red light was turned out for a minute or so previous to operating the flashlight. The need for this darkness is said to be to enable the operators to manipulate (give a protective covering to) the ectoplasm in such a manner as to prevent injury to the medium. A statement of the essential facts of this test seance has been signed by all those present'.

An article by René Sudre about Crawford appeared in the September-October 1922 issue edition of the '*Revue Metapsychique*'. What was called a 'general translation' of this was published in *LIGHT* on 6 January, 1923. In the course of his article Sudre gives an account of Crawford's research, but he devotes more space to the question of fraud, in particular to the allegations of d'Albe. He details some of the suspicions that the latter entertained; then continues, 'but when one has carefully weighed all these grievances, one sees that they are of no great importance, and most certainly do not amount to any proof of fraud. It is with a light heart that Dr. Fournier d'Albe proceeds to demolish, as the result of some 20 sittings conducted with remarkable lack of method, the work carried out by Dr. Crawford for years, and established by so many searching tests and check tests. We know that ectoplasm often takes the form of a fabric, especially in the case of the materialisations of Eva C. which Dr. Fournier strangely enough considers genuine.'

'It is well known that mediums always make involuntary movement of feet or hands whenever they produce telekinesis. Crawford himself had remarked on this: "Things happen at the Goligher circle which to a superficial observer might appear suspicious". For example, it often happens that the medium's body (or parts of her body) makes spasmodic movements when violent raps are being produced in the circle. These are simply reactions, but the fraud-hunter immediately attributes them to fraud. . . . This accidental resemblance between genuine and simulated phenomena is very disconcerting for one who is making his first experiments. It has stopped many a promising work in the psychical region."

'Apart from Crawford's testimony, all the witnesses to phenomena at the Goligher circle are unanimous in rejecting fraud. They say that the noises heard are often louder than the noise that all the sitters together could make. As to the levitations, a loaded table has risen to the height of a man's shoulders and has remained thus for several minutes, in spite of efforts to press it down to the

ground. What legs are strong enough to do such a thing, and under the vigilant eyes of the observers?"

'One cannot help agreeing with what was said by the great Bavarian savant (Schrenck-Notzing); "If any further evidence were necessary to convince me of the correctness of Dr. Crawford's researches, it would be furnished by Dr. Fournier d'Albe's book".'

From remarks made in the course of his experiments, M. Sudre concludes that Dr. Crawford never attached much importance to what mediums said, and that he was at heart very sceptical. 'He trusted to the evidence of his senses, and was rather contemptuous of phenomena of the mental order, in which he considered that the mind of the medium played too great a part. "But" said he, "It is impossible to suppose that the mind of a medium can lift a table placed a couple of feet away from her and weighing 50 lbs". He laughed at those who said they could see the operators (apparently those on the other side are here meant) lift the table with their hands. "That would certainly greatly simplify the problem of levitation". And yet he believed in the individual existence of the invisible operators.'

I have indicated above that d'Albe's book had a devastating effect upon Crawford's reputation. In the January 1923 issue of the *Journal of the SPR* is published a review of this book by Eric Dingwall who writes, 'Whether we think it just or not, the fact remains that Dr. Fournier's book will be generally taken as a complete exposé of the circle, and as a refutation of all Dr. Crawford's findings. Such a conclusion is warranted neither by the book itself nor by common sense'. The critical attitude of Dr. Dingwall, not only towards mediums, but also towards psychical researchers and their findings, was such that it is hardly an exaggeration to say that this amounts to a confirmation that Crawford's work was of considerable importance. This is not to say that Eric Dingwall was satisfied with respect to the way in which the research had been done; he certainly was not. Nevertheless, after the paragraph I have quoted above he continued, 'However unfortunate Dr. Crawford's conditions may have been he obtained results for which it is extremely difficult to account on any theory of fraud. Are we really to suppose that this family of working people, besides levitating tables and faking innumerable other phenomena, performed these tricks night after night for four years without any remuneration whatsoever? It would certainly seem to be doubtful, although not perhaps so doubtful to some as the theory of the plasma. The truth about the Belfast phenomena still remains to be discovered, and it is for the Goligher family to decide whether it shall be arrived at or not. They have two alternatives before them. They can either decline to have anything to do with any investigators—in which case they will go down to history, at least for a time, as dubious mediums with a bias against them, or on the other hand they can pocket their pride—or their fear—and demand the fullest and frankest investigation of their claims by a committee of sympathetic scientific men. It is only in some such way that progress can be made'.

Whately Smith would not agree. In his paper to which I have referred above he wrote, 'The research has been continuously conducted throughout by the one observer only—with checks on the main features by various independent observers, such as myself. It is clearly far more difficult for a trickster to maintain a deception in the face of continuous observation of this kind—unless the chief

investigator is quite extraordinarily gullible—than it is in cases where the investigation takes the non-cumulative form of the observation of a few sittings each by a series of committees who do not know quite what to look for and who can easily be put off, if need be, by a sudden "failure of power", "bad conditions", or the like.'

He also wrote the following: 'Difficult as it is to see any opening for fraud at all, it becomes much more so when we reflect that the fraudulent person or persons would have been obliged not only to simulate the phenomena but to "fake" the readings of the apparatus at the same time, and moreover, in such a way to give concordant results uniformly pointing towards a definite theory, and maintaining this concordance even in the face of experiments especially designed by Dr. Crawford to test it, and whose import was unknown to the members of the circle.'

Whately Smith wrote his paper soon after the publication of Crawford's first book; but some three years later, at a meeting of the Council of the SPR, he is reported as saying that he thought that Dr. Crawford ought to let the Society make an investigation on scientific grounds. At present the report rested on the authority of one person only; the medium might lose her powers, or she might die, and then the critical public would say that there was no confirmation, and the whole of that very valuable work would be wasted. (*JSPR*, June 1920.) There was a surprising tribute to Crawford in Dingwall's review of 'The Psychic Structures at the Goligher Circle' in volume 32 of the Proceedings of the SPR. The final paragraph is as follows: 'Not the least interesting part of the volume before us is the collection of photographs which have been admirably reproduced. Just before Dr. Crawford's death we had the opportunity of inspecting the much larger collection containing those specimens which Dr. Crawford thought unsuitable for publication. We regret their omission, as they constitute, in our opinion, one of the most important links in a chain of experiments of which very little is known outside well-informed circles. Indeed we may say that the existence of these photographs and the accumulation in the case of this and other mediums may be the ultimate means of understanding the mechanics of these phenomena. The author of these books having passed away, it remains for others to carry on his work and to revise and complete his experiments. The works he has left can scarcely fail to be regarded in the future as the most important contributions towards the study of telekinesis which have appeared up to the time that their author met his untimely end'. The following footnote may be of interest. 'By the generosity of an anonymous donor a complete set of the photographs of the Goligher phenomena, taken by the late Dr. Crawford, has been presented to the Society. They were on view at the conversazione on 20th May, 1921, and will shortly be available for the inspection of members at the Society's Rooms.'

I think it would be fair to say, judging from the publications of the SPR, there was a general feeling among the members that Crawford had made a very significant contribution to psychical research, but that it was regretted that there had not been more independent confirmation of a scientific nature of his findings. Some of the SPR Council had sought such confirmation but Dr. Crawford had not agreed to the kind of investigation for which they asked.

In the SPR Crawford file are a number of letters between John Beloff and people who were either members of the Goligher circle or had some connection

with it. One of the letters from Dr. Beloff to Horace Leaf dated 31 October 1963 contains the following: 'I lived until recently in Belfast for many years, and being a keen student of the psychical I made it my business to try and find out as much as I could about the whole baffling and inconclusive episode of Dr. Crawford and the Goligher family. My efforts to contact the surviving protagonists were unfortunately only partially successful because although I did meet some members of the "Goligher Circle", Kathleen Goligher herself refused even to acknowledge my request to meet her, and I could not trace any relatives of Dr. Crawford; it was presumed that his family had left Ulster.'

One of the members of the circle whom Dr. Beloff was able to trace was the young brother of Kathleen; he was only a boy at the time of the sittings. Although the Golighers were described by researchers of the period as a working-class family, Sam became an architect. In reply to a letter from Beloff asking for information about the circle he writes, on 6 December 1961, 'The events and matter you refer to happened a very long time ago—some forty years—and I was quite a young man then. Quite frankly, not then or since, have I had any interest in the phenomena referred to, and I have little or no memory of the events at that time.'

In March 1962 John Beloff persuaded Mr. Morrison, brother-in-law of Kathleen—and described by Crawford as the leader of the circle—to come to see him. There is no record in the SPR file of what he was told, but in a letter to Mr. Morrison, dated 15 March 1962, is the following: 'I was most interested to hear what you had to say, and may I add that your manner inspired immediate confidence. May I now suggest, without wanting to sound pompous, that you owe it to posterity to put on record your own recollections of these very unusual but significant events in which you played a leading part.' Unfortunately there seems to be no evidence that such a record was produced.

Dr. Beloff asked the Belfast Psychical Society whether its members could supply him with any information concerning Crawford or his family; but nothing helpful seemed to be available. The secretary wrote, 'As far as Dr. Crawford's family is concerned, the only contact I can suggest is Mr. S. G. Donaldson, the herbalist in 22 North Street Arcade. His private address is 24 My Lady's Mile, Holywood. I understand the medium (who died years ago) was a sister of Mr. Donaldson's wife who is also dead.'

It transpired that this information was incorrect. Mr. Donaldson's wife was not only alive, but was in fact none other than the medium herself, the former Kathleen Goligher. But in spite of John Beloff's efforts, and Mr. Donaldson's willingness to help him, it proved impossible to arrange a meeting with her—she had lost all interest in the production of psychic phenomena, and in Spiritualism.

However, Mr. Donaldson, after his marriage to Kathleen, although never a member of the circle, had carried out a series of experiments with her, helped by some friends. An article entitled 'Five Experiments with Miss Kate Goligher by Mr. S. G. Donaldson' appeared in the 12th volume of the *Quarterly Transactions of the British College of Psychic Science*. The experiments took place between 27 February and 12 April 1933.

In the first paragraph of the body of the article—following some introductory notes—is this. 'Since her marriage to the writer eight years ago, Miss Goligher has sat intermittently owing to her time being occupied with the nursing and care

of two daughters.' The five experiments which are described seem to have been inspired by Ilford's introduction, commercially, of the infra-red photographic plate. Donaldson visited the works of Ilford, who proved most co-operative in helping him with his project. He wrote that from the information which he received he 'had an apparatus made to provide the infra-red illumination. Since that time the apparatus has been altered on their advice to diffuse the rays and avoid the heavy shadows. Lately they have introduced infra-red plates three times faster than the original. These latter were used for the following experiments.' Before the sittings began he 'experimented with the lighting unit and found that by using the Infra Red Screens in double and treble thicknesses I could obtain photographs in what could be termed "darkness". This necessitated longer exposures, so I gradually reduced the number of screens until the rays cast a red glow over the room utilised. Sitters have seen the ectoplasm while the "light" was on, but I have not; as I was always the furthest away, behind the lighting unit.'

There were five experiments, but at two of them only Kathleen and her husband were present. Between one and four friends were at the other sittings. Among them was Mr. Stephenson whose previous experimental sitting has been referred to above.

A control unit was devised, which is described as follows. 'A panel is screwed to the wainscoting behind the medium, having mounted thereon four plugs and sockets. These are wired up in conjunction with four lampholders and sockets on a separate panel. Each plug is fitted with a loop of flex, and acts as a switch. The medium's movement of the feet, or forward or downward movement of the arms would pull sockets from the plugs and be detected by the light on the second panel being extinguished.' Photographs of ostensible ectoplasm in different forms were obtained at each of the sittings. I will quote the description of the one which was held on 3 April 1933. 'Present: Mr. Warrick (London), Mr. Stephenson, Mr. Smith, Mr. Goligher and self. Control as at previous seance; Mr. Warrick initialling seals on doors; inspected control of medium and held key of entrance door in pocket. Self in charge of lighting unit and camera no. 1, 7 ft from medium. Mr. Smith to left of medium in charge of camera no. 2 which was 5 ft. 2 in. from medium. Mr. Smith also controlled camera no. 3 which was focussed down on the floor in front of the medium's feet, 14 in. from front of chair to point immediately under lens and 25 in. from lens to floor. Mr. Stephenson as before. Mr. Warrick controlled camera no. 4 to the right of medium and 5 ft. 6 in. from her at an angle of 40 degrees. Mr. Goligher sat two feet behind the lighting unit.'

'After sitting about 15 minutes operators asked for a trial exposure—this was given the same duration as intended for the photograph. Instructed all to prepare cameras. Told operators I would expose plates in five seconds. After counting, gave an exposure of 10 seconds. All cameras at f.8 stop. Plates in camera were then changed and I asked for permission to expose another set. No reply. In three minutes permission given and second exposure of 10 seconds was given.'

'We had a conversation, by raps, with operators, who expressed pleasure at Mr. Warrick's presence.'

'Mr. Stephenson reported all lights as remaining on during seance; Mr.

Warrick inspected seals, etc., and declared everything in order. Result reproduced is by camera no. 2 first exposure (Plate 3). Other cameras show same results from difficult angles. The substance, which appears to lie between the medium's feet, in the words of Donaldson, "is remarkable as showing a tendency to form a human head". It is reminiscent of some of the crude head-shaped formations which were photographed at a number of Eva C's seances.'

In Plate 3, referred to above, it is not possible to determine the direction from which the substance had come, but in other plates in the series it would seem to emerge from beneath the skirt of the medium. In two of the photographs the substance has a gauzy appearance, while in another it appears to be of a stringy fibrous nature.

The article ends with these comments: 'I had hoped to obtain pictures of articles in the air but the operators state that the action of the infra-red rays prevents, (at present) the "energising" of the ectoplasm. However, they stated that they might, in time, be able to overcome this.'

'At the commencement of the infra-red experiments the medium felt reaction somewhat similar to that which occurs after a flash, but not so severe. As time went on this disappeared a great deal: now is very slight except when there is a long exposure and a large amount of ectoplasm in view. After every sitting, where the control was used, medium complained of soreness in legs which gradually left her during the following day.'

'I am aware that the results of the sittings recorded disclose nothing new or sensational. However when we resume sitting again something might be discovered that will be useful in the study of the phenomena.'

Whether there were further sittings is uncertain. In a letter to Dr. Beloff dated 5 April 1962 Donaldson refers to investigations when the family were living at Cultra, but no dates are given. He wrote 'I think round that time records were published in *LIGHT* and possibly "Two Worlds". You are going back 30 years and it is hard to recollect. Had my business premises in North Street, and my house at Cultra not been bombed I could have supplied you with many, many unpublished infra-red photographs.'

In a letter to Horace Leaf dated 9 November 1963 Dr. Beloff writes, 'I think the fact that he (Crawford) was won over to the Spiritualism of his subjects suggests a certain naivety in his character'. This may well be true, as I have mentioned above, yet he exhibited a commendable vein of scepticism in his appraisal of mental mediumship—as Sudre reported in his article. In *LIGHT* of 8 September, 1917, Crawford wrote, 'Any idea of spirit operators bodily lifting the table at this circle may be safely disregarded. The facts do not fit in with any such theory. I make it a rule, while not discouraging clairvoyance, to pay little attention to it unless it agrees in the main with the cold-blooded and unimaginative results of experiment.'

In the issue of *LIGHT* of 3 March of the same year—1917—Sir Oliver Lodge refers briefly to Dr. Crawford's belief about the 'unseen operators'. His article begins, 'I wish to congratulate Dr. Crawford on the opportunities which he has had of investigating certain psycho-physical phenomena with care and precision, and on the use which he had made of those opportunities. He has succeeded in making many of the observations which I was myself anxious to make in the case

of Eusapia Palladino, and has answered some of the inevitable questions which arise. . . . I think that Dr. Crawford has been wise in concentrating on one simple thing, namely, the untouched movements of a wooden object, and in trying to get the conditions of that phenomenon thoroughly analysed. I have myself considered this kind of movement as due to a sort of physiological extension of the normal muscular powers of a human being; and so did Professor Richet, who gave me the opportunity of seeing them many years ago.'

'I then described some of them as suggesting a rigid rod extending from the medium to the thrust object. Professor Richet called these weird things *ectoplasms* and puzzled over them as a physiologist. We did not associate this sort of thing with Spiritistic ideas: it did not appear necessary to do so. I am therefore rather struck with the concluding paragraph in Dr. Crawford's Preface (of his book "The Reality of Psychic Phenomena"), where I find that although the phenomena chiefly emphasised are so simple and mechanical, he frankly volunteers a statement about what has come to be his conviction about their ultimate source. In what I have to say I shall not touch on that aspect of the subject, but shall attend only to the mechanical and material side of things.' The rest of the article is concerned with the details of some of the experiments described in the book. Although Sir Oliver Lodge might query the reality or nature of the 'unseen operators', he did not doubt the validity of Crawford's experiments and their remarkable results.

The death of Crawford was reported in the issue of LIGHT of 7 August 1920 as follows; 'We very much regret to have to record the death of Dr. William Jackson Crawford, Lecturer on Mechanical Engineering at the Belfast Municipal Technical Institute, and author of "The Reality of Psychic Phenomena", and "Experiments in Psychical Science". His body was found on the rocks on Friday last at Bangor, County Down. At the Coroner's inquest the jury returned a verdict of death by poisoning. His wife stated that he had been suffering from sleeplessness for some weeks. Dr. Crawford had just completed a new book, and was preparing for a lecturing tour in America. He was no doubt feeling the strain of these tasks. At the time of writing we have but few particulars of the tragic event, and must await more information. We extend our deepest sympathy to his widow and family.'

On 11 September 1920 the editor of LIGHT published the letter he received from Dr. Crawford dated 26 July 1920, only a few days before his suicide. The last three paragraphs are as follows: 'My psychic work was done when my brain was working perfectly. I derived great happiness from it, and it could not be responsible for what has occurred. Possibly some anatomical change has suddenly taken place in the brain substance which would have occurred in any case. We are such complicated bits of mechanism that it does not require much to put us out of action.

'I wish to reaffirm my belief that the grave does not finish all. I trust that I will find myself with a renewed energy, and able still to further the work in which we are both interested.'

'With regard to my present condition, I feel there is absolutely no hope. The breakdown is making further way and I am getting worse daily. I feel that in a short time I might become a danger to those I love. You may think it strange that all this could take place inside a couple of weeks, but so it is. But what I wish to

affirm now with all my strength is that the whole thing is due to natural causes and that the psychic work is in no way responsible.'

Some details of Crawford's life are to be found in the 2 July 1921 issue of *LIGHT*. W. J. Crawford was born in Dunedin, New Zealand, on 28 February 1881. He came to London at eighteen, and matriculated at London University on 27 February 1901. He took a B.Sc. in Engineering at Glasgow University on 21 May 1903. He lectured at Rotherham Technical School for four years, and then taught for four months at the Barrow-in-Furness Technical School. During the same year he was appointed lecturer at the Technical Institute in Belfast. He was an extra-mural lecturer at Queen's University, Belfast, for about eight years, until his death on 30 July 1920. *LIGHT* stated that Crawford received his D.Sc. at Edinburgh University but this is a mistake. His Doctorate of Science, which in those days was awarded on the strength of a thesis, was awarded by the University of Glasgow in April 1911. The archivist of the university was able to supply some additional information about his D.Sc. Thesis, namely that it dealt with two topics; (1) The Elastic Strength of Flat Plates and (2) Dimensional Changes produced in Iron and Steel Bars by Magnetism.

I was interested to learn that Crawford's father was an ironmonger—his address was: High Street, Roslyn, Dunedin, New Zealand. The home background of Crawford may have helped him to establish a friendly relationship with his experimental group, the leader of which, S. Morrison, was a retired ship's plumber; and the Goligher family has been described by Miss Barrington in the article I referred to earlier as 'artisan'. The majority of the psychical researchers of the period were of the upper middle class which would probably not have been conducive to an easy relationship with mediums who were mostly uneducated. Yet such a relationship is important in obtaining positive experimental results.

I have referred several times above to information by or about Dr. Crawford which was published in *LIGHT*. This was, in part at least, because there was a special relationship between Crawford and the journal's editor.

In the issue of *LIGHT* of 12 June 1915 is the following. It is the first part of an article by the researcher. 'I have recently commenced a series of experiments having for their ultimate object the discovery of the composition of psychoplasm, the emanation which surrounds the medium and sitters, and which is the invisible link that transmits the forces resulting in physical phenomena. I am carrying out these investigations from time to time as opportunity permits, and with the concurrence of the editor I propose to publish the results in *LIGHT* as I go along. My reason for not waiting until the conclusion of the investigation is that I may receive from interested readers some degree of help—useful hints from observations they may make at seances. I therefore invite anyone who may come across any unusual phenomena connected with physical manifestations, such as the effect of varying kinds and degrees of light effects due to different chemical substances placed in the psychoplasmic field, electric and magnetic effects and so on, to communicate with me through the editor of this paper. I will carefully consider any such messages and put them to practical test if relative to the investigation. Of course, in research work of this kind no results of value can be predicted. We are delving into the unknown and have to take our chances. And the reader need not be surprised if the experiments to be hereafter detailed

are not described in logical sequence—the kind of sequence that is possible when all the material is at hand and results gathered together. Furthermore, much as I would like to concentrate on psychical research, I cannot do so at present. I intend, however, to be as thorough as circumstances permit.’

The remainder of the article describes the members of the circle, the circumstances in which the sittings were held and the kind of phenomena that had already been observed.

During the next five years LIGHT published a good deal of the material that is found in the books which Crawford wrote. There were also a number of suggestions and questions which were dealt with by Dr. Crawford. If he found them of value the results were included in the books, so I have not referred to them above. Although I have given a short summary of the three books, to gain any comprehensive understanding of the research the books themselves must be read with some care.

It may be wondered why Dr. Crawford did not work with the SPR rather than the College of Psychic Science which published LIGHT. The College did not have the experimental standards nor the scientific standing which the SPR possessed; but the latter—or at least some of the most influential members—were at that time prejudiced against research into physical phenomena, and perhaps did not encourage Crawford as did the editor of LIGHT.

On 14 May 1987 Mary Rose Barrington gave a lecture for the SPR on ‘The Enigma of Dr. W. J. Crawford’. In the SPR Newsletter for July 1987 Renee Haynes wrote that the lecturer ‘spoke with admirable clarity on the extraordinary phenomena obtained, observed and recorded by this researcher some 70 years ago, working in Belfast with the Goligher family, which included one remarkable physical medium, Kathleen. She produced very curious movements of tables and other heavy objects, movements synchronised with variations in her weight. Crawford—a doctor and lecturer in mechanical engineering—attributed these to the work of “operator” spirits who produced and activated “cantilevers of solidified ectoplasm” to bring about the results. Miss Barrington was more inclined to attribute what happened to some form of unconscious creative psychokinesis on Crawford’s part.

I suppose that most of those who accept the validity of the series of Crawford’s experiments would agree with this, but the possible nature of the origin of the phenomena should not, of course, affect the assessment of the reality or otherwise of what is recorded in his books.

There would seem to be only three possibilities to be considered. Either (1) Crawford, together with members of the Goligher circle, committed some form of deliberate fraud: (2) Crawford was deceived by fraud on the part of members of the circle: or (3) the phenomena took place as described. So far as I know, Dr. Crawford has never been accused of being involved in fraud.

There is no doubt that some of those who are interested in the case believe that Crawford was deceived by Kathleen and the others, and further, that it was his discovery of this that was the cause of his suicide. There is no suggestion of this in the letter he wrote just before his death—rather the reverse. Indeed I know of no evidence that Crawford had found his trust in the circle had been misplaced. Not only the contents of the letter, but certain events that took place after his death, point in the opposite direction.

If a researcher finds that he has been duped, it is reasonable to suppose that the first person to whom he would disclose his distressing discovery would be his closest colleague, one who had worked with him for several years on the project. In this case that person was his wife who was not simply a helper, but played an essential part in some of the most significant work. In a letter to John Beloff I mentioned that when I had read d'Albe's book a small point had stuck in my mind. I wrote, 'You may remember that Crawford's widow was invited to attend the sittings, and that d'Albe recorded she was present at all of them. This in itself seems to be of significance in connection with her husband's suicide. If the cause of this was, as has been suggested, his discovery that fraud had been involved in the sittings, surely his wife would have known this, and would hardly have taken part in the sittings.'

'Also of significance, perhaps, is something that d'Albe reported was said during one of the sittings when Morrison was not there. No phenomena had been obtained, and one of the sitters commented that it might be his absence was the reason. Upon this, Mrs. Crawford stated that, when on previous occasions he had not attended a sitting, phenomena had still been forthcoming. Would she have said this if she had known that the group had been fraudulent? What I have read suggests to me that the suicide was not due to discovery of fraud. I find more attractive the theory advanced by Crawford's literary executor, that he was mentally shattered by the pressures occasioned by his success. This may sound unlikely, but less unlikely I feel, than the more popular theory.'

In his answer to my letter Dr. Beloff wrote, 'What you say about Mrs. Crawford is certainly of interest, but of course husbands do not always confide in their wives. If Crawford was so brazen as to lie to the world when he left that suicide note denying that the suicide had anything to do with his psychic experiments then he was surely capable of lying to his wife. But I have never thought it likely that his suicide was due to his discovering that he had been duped. I seem to remember that he feared he was going out of his mind and it strikes me that a psychiatric explanation for the suicide is much more plausible.'

There may be significance in the fact that Mrs. Crawford attended the test experiment, which I have mentioned above, arranged by Mr. Stephenson on 6 September 1920, only a few weeks after her husband's death. It seems that special precautions were taken. Mr. Stephenson records that two lady doctors were present—no doubt to help in the search of the members of the circle—and a professional photographer was in charge of the five cameras that were used. Fifteen pictures of the 'plasma' resulted. It would seem that Mrs. Crawford was convinced of the validity of the proceedings as all those present signed 'a statement of the essential facts of this test seance'.

Also the five experiments by Mr. Donaldson, described briefly above, point towards the validity of Dr. Crawford's work. Dr. Beloff, in a letter to me dated 7 May 1986, writes concerning his efforts to meet Kathleen Goligher; 'Unhappily she refused to answer my letters. It seems Fournier d'Albe had put her off psychical researchers once for all! I did, however, meet her husband Donaldson, who was most cooperative, also her sisters and Mr. Morrison. It appears that she and her husband went on holding private seances between themselves for many years after Crawford's death and ectoplasm was said to have been copious. This

would suggest to me that the phenomena were genuine, at least if Donaldson can be believed. What otherwise would be the point of private seances?’

After Renée Haynes’ comments on Mary Rose Barrington’s lecture she wrote that Miss Barrington went on ‘to assess the whole case in accordance with the idea that all human experience is a form of collective hallucination (veridical or not?) modified by individual experiences; a concept which tallies with an increasingly popular revival of Bishop Berkeley’s philosophical idealism’.

Whatever may be the ultimate meaning of earthly existence, one should be grateful for William Crawford’s life, and sad that it ended in tragedy when success in his psychical work seemed to be on the point of international recognition. Or was it all a delusion? Nothing can be established with certainty, but on the evidence presently available I think the balance must come down in favour of the ingenious doctor.

Perhaps Richet, Schrenck Notzing, Geley and the others were right in their conviction that these ‘weird ectoplasms’ did in fact exist. The modern laboratory-trained parapsychologist might well comment, ‘So what?’ The great majority of scientists—be they physicists, psychologists or parapsychologists—are conservative in the approach to their particular discipline. Any possible radical change in the basics of their subjects may seem threatening, although this feeling perhaps is not conscious. Even many parapsychologists are wary of considering the evidence of the reality of macro-PK phenomena. It has been the custom so long to regard with great scepticism the results of those who worked in this field three or four generations ago, that the small amount of recent research that has been done has not aroused a great deal of interest. Also parapsychologists have not yet achieved general respectability among their academic colleagues, and may fear that research into macro-PK phenomena would make them even less acceptable in the scientific sphere.

Those who work in any of the more conventional life sciences have even more cause for anxiety. If those workers in previous generations who were convinced of the reality of such phenomena were right, it could well mean that there might have to be some radical rethinking by, for example, bio-physicists, psychologists, and even philosophers: for the manifestations of ectoplasm—telekinesis and materialization—obviously involve the relationship of mind and body. Nothing less than the nature of man is in question.

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