



3 2044 009 561 176

EXPERIMENTS IN PSYCHICAL SCIENCE

Levitation, Contact,
and the Direct Voice

W. J. CRAWFORD, D.Sc.

Phil 7069.19.60

Is

**HARVARD COLLEGE
LIBRARY**



**FROM THE ESTATE OF
HANNAH P. KIMBALL
OF BOSTON**

JUNE 23, 1922

FROM
The Larger Life Library
18 Newbury Street,
Boston, Mass.

**EXPERIMENTS IN PSYCHICAL
SCIENCE**

BY THE SAME AUTHOR

THE REALITY OF PSYCHIC PHENOMENA

A record of the series of scientific tests carried out by the author in 1915 and 1916 to determine the amount, direction and nature of the force used in levitation and other Psychic Phenomena.

Liberally illustrated with diagrams

\$2.00 net.

**HINTS AND OBSERVATIONS FOR
THOSE INVESTIGATING THE
PHENOMENA OF SPIRITUALISM**

Formulating for enquirers the conditions and surroundings which the author has discovered to afford the best opportunities for communication between our world and the Unseen.

Illustrated

\$1.25 net.

**E. P. DUTTON & COMPANY
NEW YORK**

°
**EXPERIMENTS IN
PSYCHICAL SCIENCE**

*Levitation, Contact, and
the Direct Voice*

BY

W. J. CRAWFORD, D. Sc.

LECTURER IN MECHANICAL ENGINEERING, THE MUNICIPAL TECHNICAL
INSTITUTE, BELFAST; EXTRA-MURAL LECTURER IN MECHAN-
ICAL ENGINEERING, QUEEN'S UNIVERSITY OF BEL-
FAST. AUTHOR OF "THE REALITY OF
PSYCHIC PHENOMENA," ETC.



NEW YORK
E. P. DUTTON & COMPANY
681 FIFTH AVENUE

✓ ~~P~~hil 7069.19.60

Copyright, 1919,

BY E. P. DUTTON & COMPANY

All Rights Reserved

HARVARD COLLEGE LIBRARY

FROM THE ESTATE OF

HANNAH P. KIMBALL

JUNE 23, 1922

Printed in the United States of America

PREFACE

In this work I deal with problems connected with the physical phenomena of spiritualism. I have already examined some of these in *The Reality of Psychic Phenomena* published two years ago, but in the present volume I go further into details. I described experiments for the most part of a more difficult and far-reaching nature than those set forth in my former book. In addition, I give the results of tests carried out on "contact" phenomena and on the "direct voice."

I purpose in the near future to write a volume dealing with the more intimate details of the psychic structures at the Goligher circle.

I think that a series of small works dealing with the results of psychic investigation is preferable to one unwieldy volume containing masses of detail. One needs to take these psychic matters in small doses if they are to have any chance of assimilation.

My purpose in writing these books, is to advance our knowledge of psychic phenomena and the laws underlying them. The actual experimenting has given me great pleasure, though it

has involved the outlay of much time and labour. No one unacquainted with the subject and its peculiar difficulties can adequately appreciate the time and toil required in the preparation of even a small work such as this. The only reward is a mental one and the stimulation comes from one's innate interest in the subject.

I have to thank Mr. S. Stoupe, of the Art Department of the Technical Institute, Belfast, for the valuable help he has given me, especially with regard to photography, and Mr. C. C. Pounder, A.M.I.Mech.E., for his assistance in reading over the manuscript and suggesting alterations and improvements.

I also desire to thank other friends who have helped me in various ways.

In the text of the present work I use the letters R.P.P. when I refer to my former book *The Reality of Psychic Phenomena.*

W. J. CRAWFORD. .

Belfast, February, 1919.

CONTENTS

CHAPTER	PAGE
I. INTRODUCTORY	1
II. NEW PROBLEMS AND EXPERIMENTS ON RE- ACTION	19
III. MISCELLANEOUS	86
IV. ANALYSIS OF RESULTS	106
V. QUESTIONS AND ANSWERS	136
VI. CONTACT PHENOMENA	160
VII. DIRECT VOICE PHENOMENA	173

FULL-PAGE ILLUSTRATIONS

	FACING PAGE
Fig. 7. Style of Table used in the Experiments showing also the Position of the Me- dium	29
Fig. 27. The Table in Position supported clear of the Floor by Cords from Balance . .	162
Fig. 28. Showing Balance with Table attached ready for Experiments	163
Fig. 29. The two Trumpets and other Parapher- nalia ready for the Direct Voice Ex- periments	180

**EXPERIMENTS IN PSYCHICAL
SCIENCE**

EXPERIMENTS IN PSYCHICAL SCIENCE

CHAPTER I

INTRODUCTORY

Problems which await solution—The Goligher phenomena—What the operators themselves say about the psychic structures.

ALTHOUGH complete in itself, the present volume is partly a continuation of my previous book, "The Reality of Psychic Phenomena," which I assume the reader has perused. In that book I described a series of experiments carried out with a view of ascertaining the laws governing the lifting of tables at séances. Those experiments dealt, in the main, with phenomena produced at a home-circle in Belfast at which tables and stools and other articles were lifted into the air untouched by any person. I put forward the theory that rod-like structures issued from the body of the medium and effected the levitations. The table movements were execu-

2 EXPERIMENTS IN PSYCHICAL SCIENCE

ted under the guidance of invisible "operators" who, under the séance conditions, were able to work in conjunction with the medium.

In this volume the matter is taken further. It deals with experiments carried out by me at Belfast in 1916-1917. The circle referred to as the Goligher circle consists of Miss Kathleen Goligher (the medium), her three sisters, brother, father, and brother-in-law. The terminology employed is the same as that previously used.

Although certain general conclusions were put forward in my previous book, many problems were necessarily left unsolved or were only partly solved. A few such are as follows:

- (1) While the table is levitated, what is the effect of adding weights to it, i.e., of gradually increasing the weight of the levitated body? If the cantilever theory be true, would not the applied moment of the weight at length reach such a magnitude that the medium would topple over in her chair?
- (2) When a man presses downwards with great force upon the levitated table would not the cantilever theory involve the toppling over of the medium?
- (3) Is the cantilever theory true for all types of levitation phenomena or is it only true for a particular case?
- (4) What type of psychic mechanism is em-

played when the medium's chair (with the medium sitting in it) is bodily moved about the floor of the séance room?

- (5) How is it that the medium feels no reaction effects upon her body?
- (6) What type of psychic mechanism is employed when the table rests on the floor several feet from the medium and a man cannot move it either inwards or outwards, however hard he pushes it towards, or pulls it from the medium?
- (7) What is the exact shape of the cantilever arm which levitates the table?

These are problems upon which I hope to throw some light in this book. The experimental consideration of the more intimate details of the psychic structure is left to another occasion.

In order that the reader may properly focus his attention on the work to follow, let me briefly describe, even at the risk of some slight repetition, the phenomena that occur at an ordinary observational séance with the Goligher circle.

THE GENERAL PHENOMENA

The members constituting the circle enter the room and each sits down on his customary chair. They sit round in the form of a circle about five feet diameter and the table is placed in the centre. The ordinary illuminant is turned off and a

red light turned on. The sitters clasp each other's hands in chain order and the séance commences. One of the members of the circle opens the proceedings with prayer and then a hymn is sung. In a few minutes, sounds—tap, tap, tap,—are heard on the floor close to the medium. These are the first “spirit” raps of the evening. They soon become louder and stronger and occur right out in the circle space, on the table, and on the chairs of the sitters. Their magnitude varies in intensity from the slightest audible ticks to blows which might well be produced by a sledge-hammer, the latter really being awe-inspiring and easily heard two stories below and even outside the house. The loud blows perceptibly shake the floor and chairs. Sometimes the raps keep time to hymns sung by the members of the circle; sometimes they tap out of themselves complicated tunes and dances on top of the table or on the floor. Besides the ordinary raps the operators can produce various modifications and peculiar variations. For instance, they can imitate a bouncing ball so perfectly that one would be prepared to affirm a ball was really in the room. They can imitate to perfection the sawing of the table leg, the striking of a match, the walking of a man, and the trotting of a horse. They give double and treble knocks, i.e., two or three fast ones and one slow one. In fact, almost every variety and combination of rap it is

possible to imagine is heard. I have used the phonograph in the séance room and possess three authentic records of many varieties of the raps. These records I have used while lecturing on this subject. The recorded sounds can easily be heard in a hall holding 500 people.

After a quarter of an hour or so the rapping ceases and another type of phenomenon takes its place. The reader should remember that the members of the circle are simply sitting on their chairs holding each other's hands in chain order and are only passive instruments in the hands of the invisible operators—whoever the latter may be supposed to be. The little table is standing on the floor within the circle formed by the sitters and is not in contact with any of them or with any portion of their clothing. Suddenly the table gives a lurch or moves slightly along the floor. After a while it may give another lurch or it may rise into the air on two legs (two legs being thus in the air and two on the floor). These movements—which are executed, as I have said, without physical contact with the medium or the members of the circle—are the preliminary motions which usually take place just previous to the first levitation, i.e., before the table rises completely into the air of itself where it remains suspended for several minutes without visible support.

I have seen hundreds of levitations under all

6 EXPERIMENTS IN PSYCHICAL SCIENCE

conditions; standard levitations such as that mentioned above, abnormal levitations (such as where a stool rose four feet into the air and moved gently up and down for several minutes while we all examined it closely and while the medium was seated on a weighing machine) and freak levitations (such as where the table, being levitated, rocked in the air just like a small boat tossed about on a choppy sea). I have seen the table turn completely round in the air, and I have seen it levitated upside down and sideways.

After the exhibition of levitation ceases, the trumpet phenomena commence. At the beginning of the séance a couple of thin metal cones which fit telescopically into each other and which we will call "trumpets" are fixed together and placed upright on the floor between the medium and her father. The trumpets now begin to straddle over the floor with little leaps and jerks, remaining in a vertical position until they reach the table (now at rest in the centre of the circle) where they fall or are sometimes seemingly pushed over, and are then drawn under the table. A loud shuffling noise is now heard, for the operators are trying to detach the trumpets, a somewhat difficult process as they fit rather tightly together. At length, however, the operators succeed in separating the two pieces, which are soon seen floating in the air, with their ends projecting from under the table. The halves

then beat time to a tune, like the batons of a conductor, after which a visitor is allowed to grasp the end of either and thus “shake hands” with the invisible entities. Sometimes the operators press upwards on the under-surface of the table with one or both of the floating trumpets, thus levitating it. A little handbell is sometimes placed on the floor and this is often lifted and rung. The sound may be clear as though the bell were held by the handle, or dull as though it were held by the metal. Sometimes raps accompany the ringing of the bell. The sitters are occasionally psychically “touched” on various parts of the body.

Towards the end of the séance—about an hour and a half from the opening—the psychic energy available, to use a common term, is at a maximum and great forces are exerted. For instance, although a heavy man sits upon the table it moves about the floor with great ease; or the table being levitated, a strong man pushing from the top cannot depress it to the floor; or the table moves to the side of the circle farthest from the medium and an experimenter is asked to lay hold of it and try to prevent its return to the centre, but he is totally unable to do so; or the table’s weight can be temporarily so much increased that it cannot be lifted, or on the other hand so much reduced that it can be raised by an upward force of an ounce or two; or the table

8 EXPERIMENTS IN PSYCHICAL SCIENCE

being turned upside down on the floor cannot be raised by a strong upward pull on the legs, being apparently fastened to the floor.

SOME NEW LEVITATIONS

Besides the ordinary standard type of levitation in which the table rises vertically into the

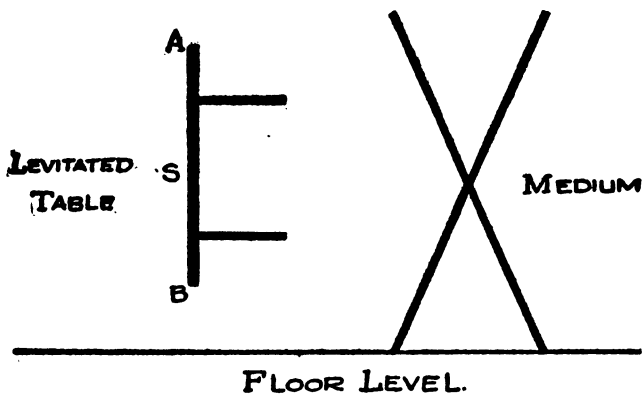
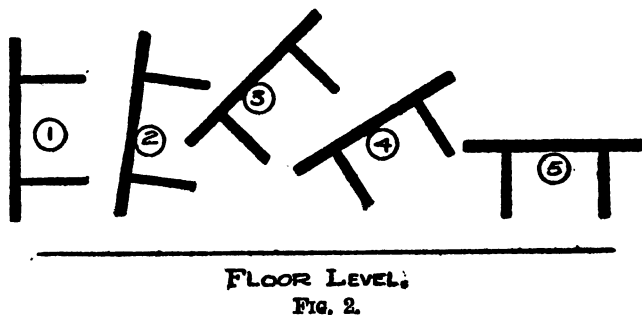


FIG. 1.

air in a normal manner, various modified and peculiar types of the phenomenon have occurred. At a recent séance the table turned over on its side with edge of surface and two legs on the floor, surface remote from medium. Then it levitated in that position (fig. 1) remaining in the air for about half a minute, with lowest edge about a foot above the floor. The surface (S) was about 4 feet from the body of the medium.

It levitated again in the same way and then turned over in the air, very slowly at first and then jerkily, until its surface was horizontal and it had attained a normal levitated position. Fig. 2 gives successive positions.



At subsequent séances the table turned completely over, as above, both broadwise and endwise, i.e., where in the one case AB (fig. 1) represents the short edge, and, in the other case, the long edge of the surface.

While at position (3), i.e., where the table was inclined at about 45° to the floor, the operators seemed to experience the greatest difficulty in the carrying out of this phenomenon. They seemed to have no trouble in levitating the table as at (1), and in turning it over in the air to about position (3), but a halt always occurred at (3). Sometimes, even, the table dropped there, the completed phenomenon evidently being impossible despite the almost frantic efforts of the opera-

10 EXPERIMENTS IN PSYCHICAL SCIENCE

tors. At other times, after a brief halt and various shakings and jerkings in the air, the table was turned over into positions (4) and (5). At the critical point (3) sounds were often heard on the surface and legs of the table, as though suckers were slipping over the wood, or were being forced off, or were taking new grips. There could be no mistaking these sounds, for they made quite an audible swish. On one or two occasions the table suddenly dropped 6 inches or so in the air, and simultaneously there was heard the swishing noise, the inference being that a sucker had been torn from its grip. The operators themselves say that during these abnormal levitations they have several psychic rods projecting from the medium simultaneously, and that they grip the surface, the legs, and the cross-bars (if the table possesses them) with the ends of these rods, which resemble *straight* arms having the power to take a suction grip on wooden surfaces with their free extremities. Up to position (3) (fig. 2) it is easily understandable that the rods could fairly easily grip the legs or under-surface of the table (perhaps three rods being in operation at once) and turn the table partly over as shown; but about position (3) there would have to be a new disposition of the rods; or one or more of them would have to let go and take a grip on another part of the table;

or owing to the awkward position reached, some of the rods would have too much stress upon them and would be likely to slip (as seems actually to occur, if we may judge by the sounds heard); and in general, new arrangements would have to be made. Imagine a man sitting in the medium's chair and, instead of his two arms, to possess three or four *unjointed* rods which he

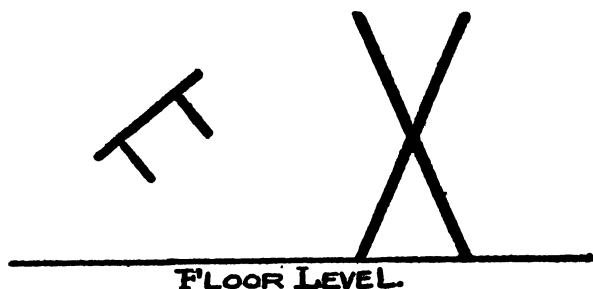


FIG. 3.

can move up and down and to and fro, which he can shorten and lengthen but which he cannot bend, and with the ends of which he can take a suction grip on various parts of the table, and we have a fairly good idea of what is taking place during the occurrence of the phenomenon.

The psychic rods are usually quite invisible.

Abnormal levitations (in each case lasting for a minute or longer, not merely transitory) have also occurred as in Fig. 3, where the table remained in the air inclined as shown, with legs

12 EXPERIMENTS IN PSYCHICAL SCIENCE

towards medium, and as in Fig. 4, where the legs were directed away from the medium.

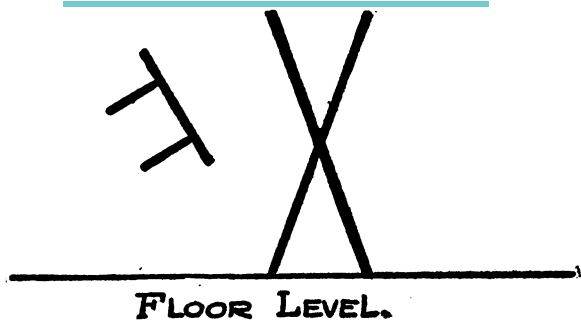


FIG. 4.

THE SHAPE OF THE LEVITATING CANTILEVER ACCORDING TO THE OPERATORS

The shape of the cantilever at the end of my first series of experiments was comparatively doubtful. I took it to be roughly as follows (see Figure 5 on the following page):—Here M is the medium, T the levitated table and AB the levitating cantilever, the last consisting of two main portions, A, an arm springing from the medium, and B, a vertical column continuous with the arm pressing upwards on the under-surface of the table. I have since taken the opportunity thoroughly to question the operators as to its shape. A séance was held at my own house and replies to questions were given by means of raps, blows, shufflings on the floor, etc. The following was the code—

Three raps meant "Yes,"

One rap meant "No,"

Two raps meant "Doubtful."

A continuous series of raps meant that the operators wished to say something on their own account, i.e., they wished the alphabet spelt out

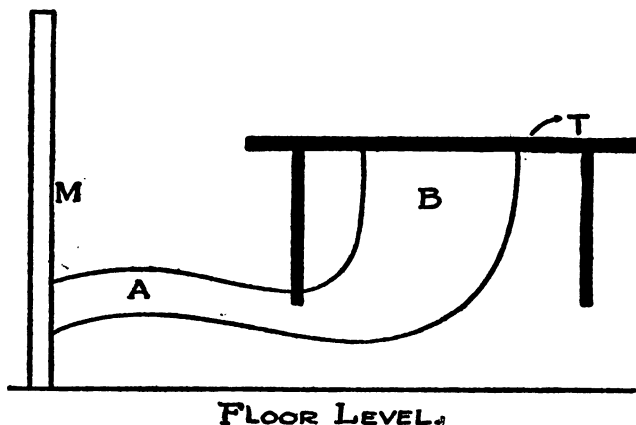


FIG. 5.

to them so that they could interpolate a word or a short sentence.

A long scraping sound on the floor meant that my supposition (on which I was basing the question) was not quite correct although it contained some elements of the truth.

A great many emotions such as joy, sorrow, agreement, disagreement, fun, friendliness, anger, etc., were often also indicated by the various styles of rapping. For instance, loud emphatic

14 EXPERIMENTS IN PSYCHICAL SCIENCE

blows in answer to a question indicated (according to their number) strong agreement or disagreement; or if a lot of questions were asked, none of which would seem to hit the exact truth, and a final question apparently did actually strike it, there was a little fusillade of raps indicating that the correct solution had at last been reached. Sometimes the operators seemed so pleased at my guessing something correctly that they suddenly rapped out a lively little tune on the floor.

The reader should understand that the following description of the levitating structure is given by the operators and that I am not responsible for it and do not attach undue importance to it. Nevertheless it has its points of interest and I think should be included.

With regard to the dimensions of the cantilever structure, I first asked the operators if they understood what a "cross-section" was. They answered "No." Then I went on as follows:

Q. Do you know the meaning of the words "diameter" or "thickness"?

A. Yes.

Q. Do you know the magnitude of the dimension we call an inch?

A. Yes.

When I asked them to rap out the number of inches in a certain part of the structure they

usually hesitated for a little as though thinking the matter over, and then rapped out the number decisively and firmly.

According to the operators the dimensions and shape of a normal levitating cantilever are as shown in Fig. 6.

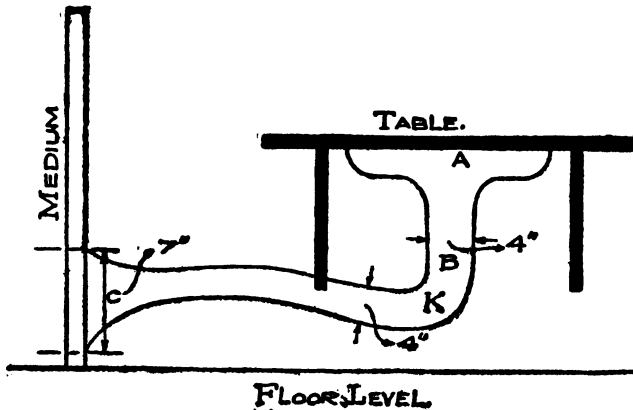


FIG. 6.

- A. The top of the columnar part of the cantilever is spread out into a broad flat surface of area approximating to the under-surface of the table. In other words the head of the cantilever is shaped like a mushroom and even bears some analogy to that boy's plaything known as a sucker.
- B. A fairly uniform vertical column of diameter about 4 inches. At K the cantilever changes its direction from vertical to

16 EXPERIMENTS IN PSYCHICAL SCIENCE

more or less horizontal. At K the structure is 3 or 4 inches above the floor.

- C. Just before entering the body of the medium the rod widens to a diameter of about 7 inches. The rod does *not* branch out like the roots of a tree where it enters the body of the medium, but goes in undivided.

I had thought it possible that the fixed end of the cantilever (i.e., the end fixed to the body of the medium) might spread out into a large number of little rootlets (see R.P.P. ch. xiii), but the operators were most emphatic that it does not, but goes in solid, although its diameter increases (from 4 inches to 7 inches). The diameter given for the greater part of the structure, viz., 4 inches, agrees approximately with the diameter of the vertical and arched columns seen in the photograph (see R.P.P. ch. xii).

It is to be remembered that the whole structure is generally quite invisible to any one with normal eyesight. The operators always said, however, that under certain conditions certain people who are *not* clairvoyants would be able to see it, and this statement of theirs has lately proved to be true. I will deal with this point in a later volume.

WHAT THE OPERATORS SAY OF THE RAPPING RODS

The theory for rapping developed in my former book is that a psychic "rod" issues from the

body of the medium; a semi-flexible rod, which is moved up and down and strikes the floor or table. The operators say that the rod theory considered generally is correct. They say that raps are produced in two ways:

- (1) Soft raps, bouncing ball imitation, etc.,—
by beating the side of the rod on the floor,
as one uses a stick for beating a carpet.
- (2) Hard raps—by beating the rod on the floor
more or less axially.

While I was obtaining this explanation from them, they illustrated the various styles of raps under consideration at the moment by actually rapping on the floor.

I asked them the approximate dimensions of a rapping rod used to give a fairly hard blow. They gave a blow on the floor as a sample and then said that the diameter of rod used in that particular case was about 2 inches and of uniform thickness over its length, until just before entering the body of the medium where it increased to a diameter of about 3 inches.

The operators also said that the same rod could be used to make a variety of raps according to the strength with which it was struck on the floor. They illustrated this statement by producing (they said with the *same* rod) a quick variety of raps, as follows:

- (1) Light taps, as though a lead pencil were striking the floor,

18 EXPERIMENTS IN PSYCHICAL SCIENCE

(2) Light bouncing ball imitation, and

(3) Hard blows.

These three different raps were used at this time to reply to questions requiring an affirmative answer, i.e., if the operators wished to say "Yes" they gave the three raps (1), (2), (3) above, all different, in succession; a rather interesting development.

CHAPTER II

NEW PROBLEMS AND EXPERIMENTS ON REACTION

Capsizing of medium and her chair during levitation

—The two kinds of levitating structure—Effect on weight of medium when experimenter presses downwards on levitated table—Levitation over spring balance—Upside down levitation—Effect on medium when table's weight is increased—Relation between increased weight of table and loss of weight of medium—Bicycle tests—Psychic structure used when table is pushed inwards strongly towards medium—Direct downward push on spring balance—Psychic mechanism used when medium and her chair are pushed along the floor—Matter abstracted from the body of the medium.

IN my former book, as I have already said, many problems were left unsolved with regard to mechanical reaction during the phenomenon of levitation of the table. I am now going to describe experiments carried out for the purpose of solving some of these and of clearing up points which were left in a doubtful state. As an introduction to this part of my subject the following article, reprinted from "The Interna-

tional *Psychic Gazette*" of September, 1916, will be found useful:

"During a recent series of experiments upon table levitations, rapping, and allied phenomena, I had occasion to examine pretty carefully the reaction upon the medium, for upon the extent and character of the reaction depends the ability to form a satisfactory theory.

"In this article I wish to give the results of late observations upon the character of the reaction, and to state as clearly as I can the points with regard to it which are definite and fixed, and those which are still more or less indefinite and, indeed, mysterious.

"It is well to examine as minutely as possible the case of a table steadily levitated a foot or so in the air; that is to say, a table which, so far as observation goes, is apparently at rest in the air in front of the medium, and is not perceptibly oscillating to and fro, or up and down. I had better say here that I have never witnessed an absolutely immobile levitation, for close observation always shows that there are minute tremors and movements; but in good examples of the phenomenon these are so small as to be practically negligible.

"Of course, the reader is to understand that neither the medium nor members of the circle are touching, or in contact with the table in any way. They have either their hands joined in

chain order, and feet firmly on floor, or hands on knees for experimental observations. The diameter of the circle is about 5 feet, with the table in the middle. I have seen many hundreds of levitations under all conditions.

"Supposing, therefore, that the table is steadily levitated, what have I found occurs to the medium? First of all, and most important, between 95 per cent. and 100 per cent. of the weight of the table is added to the normal weight of the medium; i.e., for all practical purposes of calculation the effect is the same as though the table were resting upon her head, or as though she was holding it up with her hands. Experiment, moreover, indicates where the slight difference lies. For there is also a slight reaction, not more than 5 per cent. of the weight of the table, upon the members of the circle (six in number) other than the medium; so that it is probably correct to say that the effect is exactly the same as though the table were lifted and held at rest in the air by the medium herself aided very slightly by the help that could be supplied by, say, the use of a finger on the part of each member of the circle.

"The important fact, however, is that during all the experiments I carried out, nearly all the weight of the levitated table was, during the period of the phenomenon, added to the weight of the medium. My heaviest experimental table

22 EXPERIMENTS IN PSYCHICAL SCIENCE

was a little over 10 lb., and the lightest slightly less than 3 lb., so that great weights were not involved. We therefore arrive at the law for this circle:—During levitation of light bodies the weight of the levitated body is practically added to the weight of the medium. This, so far as I am concerned, is definite, and admits of no doubt whatever.

“But now we come to more troublesome considerations. What is the effect of the added 10 lb. (for the heaviest table) on the organism of the medium? Is she conscious of anything in the nature of stress on her body? Is the reaction local or diffused?

“In the first place, during levitations at circles held up to about nine months ago, the muscles of her arms from shoulder to wrist were absolutely rigid and hard—indeed, during high levitations they were iron-like in their stiffness. She also experienced a stiffness all over her body, but not to the same extent as in her arms. The bend of the arm was chiefly affected, as well as the muscles at the ankles. Gradually, however, during late months this muscular rigidity during levitation, has been dying away, as I have myself observed; until, during the last few séances, as I am informed by the director of the circle, it is no longer perceptible.

“Miss Goligher (the medium), who is a highly intelligent young lady, tells me that she experi-

ences now no sensation whatever during the occurrence of phenomena. What has happened in the interval of nine months to cause this change? Has there been a corresponding fundamental change in the character of the phenomena? Not so. The phenomena are of the same type and as powerful as ever.

"At any rate the medium insists that she feels nothing whatever during phenomena, yet I know there is an added weight upon her of about 10 lb. when the table is levitated. The question to consider is why she does not feel this weight; why she experiences no inconvenience of any kind.

"The change in the character of the muscular stress experienced by the medium may perhaps be assumed to be due to the reaction nowadays being more evenly spread over her body than was formerly the case. From being a localised reaction it is now becoming a diffused one. In other words, the magnitude of the reaction per square inch of her body is relatively small and escapes notice.

"But such an attempt at explanation can only contain a small part of the truth. It might suffice if the total reaction never amounted to more than 10 lb. or so, but, as a matter of fact, it is often greatly in excess of this, as, for instance, when a table being levitated, a man presses down on the top of it in an endeavour to depress it to

the floor. Allowing 30 lb. for the muscular pressure of the man and 10 lb. for the weight of the table, we have a reaction on the medium of 40 lb.; and there are many other cases which I have not space to enumerate, in which the total reaction on her body must amount to at least half a hundredweight. Even if such a reaction were diffused (and this is at any rate not always the case) one would think it would be bound to cause physical inconvenience to the medium; and especially would this be so if the reaction were of a variable and impacting nature as is often the case.

“I am now going to offer a hypothesis to account for the insensibility that the medium has always more or less displayed to these reaction forces (though this insensibility is at a maximum nowadays, as I have explained)—a theory which I feel sure has at any rate something in it. It may be stated thus: During the occurrence of phenomena the medium, although her brain is practically normal, has a peculiar state of insensibility upon her body, allied to the similar state that can be produced by hypnosis. This peculiar condition is induced, I think, of set purpose by the operators, in order to render her insensitive to the various mechanical actions which have their focus on her body. That something like this really occurs is rendered likely by an incident which took place at the circle. The medium

was entranced (not for physical phenomena, during which she is always normal) and the control said he was going to show the sitters an experiment on the insensibility to pain he could induce. The medium had a painful and unhealed burn on one of her elbows, but notwithstanding this she beat both elbows with some force on the arms of her chair—and seemed to enjoy it. She felt no pain whatever when she awoke from trance.

“A similar case occurs to me concerning another medium in England. A friend in whom I place implicit confidence tells me that he has seen several men sitting on top of a heavy dining table, which rose on two legs. The medium then placed one of his feet under one of the raised legs of the table which proceeded to pound his foot with tremendous force—with a force which could not have failed to break the bones of a normal foot. Yet the medium’s foot was quite uninjured and he suffered no pain then or afterwards.

“Thus it seems likely that the want of sensibility to heavy and varied reactions which undoubtedly occur upon the medium is due to some peculiar condition of her organism during the period of phenomena.

“This is also borne out by the reaction effects of heavy raps or blows on the floor. The medium tells me—and there is no doubt she speaks ab-

solute truth—that she is totally unaware of any movements of her body while such blows are occurring. Yet such reactionary motions sometimes do occur. They don't always occur, and the fact that they don't is one of the mysteries of this kind of phenomena. But I have watched her sitting quietly on a chair in my own house with the red light shining directly on her white blouse, while great sledge-hammer blows have been occurring on the floor several feet in front of her at intervals of a few seconds; and as each blow was struck I have watched her whole body from the waist upwards sway backwards several inches. The blows then became lighter and swifter, and with the change the character of the reaction shocks also changed, becoming also lighter and swifter—and finally when a regular fusillade of raps was being produced, she was under a regular bombardment. I went over beside her and felt the various motions of her body. Yet she is unconscious of them, although quite mentally alert. These slight motions are all that occur while phenomena are in operation. During levitations lasting up to five minutes she sits on her chair as firm as a rock.

“A matter that I had perhaps better mention, is the danger that an unobservant and unscientific witness of the rapping phenomena might uncritically conclude that the various slight motions of the medium's body, referred to above,

betokened conscious or unconscious fraud on her part. I need not labour the point with regard to Miss Goligher, but I am afraid other mediums may have thereby suffered in the past. Such movements and body stresses are what we should expect, and I for one, knowing what I do about physical phenomena, would be surprised to see them entirely absent. For the whole of such phenomena—I refer to levitations, rappings, movement of furniture, etc., are purely mechanical operations and must, therefore, obey the laws of mechanics.”

A matter that caused much comment and discussion was the fact, that during levitation of the table, the medium had never manifested any tendency to overturn. It is obvious that if the cantilever theory be true, there is a fairly large turning moment upon the medium even when the table itself is the only body levitated, i.e., without additional weights; while, if a man presses vertically downwards with considerable force upon the levitated table, the turning moment is greatly increased; yet the medium had never shown the slightest tendency to topple over.

The table usually levitates with its centre about $2\frac{1}{2}$ feet from her trunk; hence, with a downward force of, say, 50 lb. the capsizing moment is 125 lb.-ft. which, to say the least of it, is fairly large and should, one would think, cause

physical inconvenience to the medium. But it is not so. The medium tells me she feels nothing at all.

During ordinary demonstration séances (in contradistinction to experimental ones) she sits on a fairly large wooden chair having wooden arm rests on either side, i.e., her chair is somewhat heavier and more massive than the chairs of the other sitters. It can be shown that her own weight and the weight of her chair, together with the pressure of her feet on the floor, were sufficient to counterbalance the greatest turning moment which had so far been applied during ordinary table levitations.

EXPERIMENT 1: *Capsizing moment on medium.*

I therefore determined to place the medium on a weighing machine, and, gradually increasing the weight of the levitated body, to take the reaction upon her for each weight and observe what would happen. Neither the medium nor any of the members of the circle suspected my real intention, viz., to see if a turning moment would be reached sufficiently great to pull the medium off the machine.

Apparatus.—A small platform weighing machine reading to 8 cwt., and marked to 2 oz., a half imperial size drawing board (covered with



FIG. 7

a piece of dark cloth) placed on the platform of the machine to increase slightly its area.

Method.—The medium vacated her usual chair, and sat on an ordinary small-sized chair, placed on the platform of the weighing machine. Her hands were on her knees and she was isolated from everybody. The height of the platform above the floor of the room was $7\frac{1}{2}$ inches. Conditions were exactly similar to those described in Chapter 3, R.P.P.

I first took the reaction on the medium for the weight of levitated table alone, and then I placed on the surface of the table a circular 10 lb. iron weight, obtained the reaction for that, added another 10 lb. weight and so on. The table rested on the floor between each levitation.

Note.—Several different tables were used during the experiments described in this book. Sometimes for purposes of certain tests, alterations were made to some of these tables which affected their weights a little; but in every case I give the weight of the particular table used for a given experiment. I finally constructed the table shown in Fig. 7. This had no crossbars connecting the legs, and nails, screws, etc., were eliminated as far as possible. Its dimensions were as follows:

Length, 22 inches.

Width, $19\frac{1}{2}$ inches.

30 EXPERIMENTS IN PSYCHICAL SCIENCE

Height, 28 inches.

Weight, 121¼ lb.

DATA:

Weight of table in this test.... = 8 lb. 1 oz.

Weight of medium + her chair
+ drawing board..... = 135 lb. 8 oz.

The following were the results:

Weight of levitated body	Reaction on the medium due to the levitation
8 lb. 1 oz. (table only).....	8 lb. 12 oz.
18 lb. 1 oz. (table + 10-lb. wt.)..	19 lb.
28 lb. 1 oz. (table + 20-lb. wt.)..	29 lb.

The weighing machine was not quite so sensitive as that used in the first research, but it was quite good enough for the work in hand. Results may be considered accurate to ½ lb. either way. Of course any slight movement of the levitated body in the air affects, to some extent, the value of the reaction on the medium, and it is quite impossible to obtain absolutely steady levitation.

For the first case given in the above tabulation, i.e., where the table was levitated without additional weights, there were in reality *two* values for the reaction on the medium: (1) when the table was levitated only about 4 inches in the air the reaction was 10 lb. 14 oz., (2) when the table rose to about the level of the medium's

knees, the reaction of 8 lb. 12 oz. was obtained and this was the minimum and steady value.

Up to a total levitated weight of 28 lb. the medium felt nothing, and she had no tendency to overturn; but when I placed the third 10 lb. weight on the table, making altogether a total load of 38 lb., and the table levitated for an instant, the medium's feet, which were firmly planted on the weighing machine, slipped away from under her. She said she was moving forward and could not help herself. The table remained up only for an instant. I made the medium place her feet as far back as possible on the machine, but during the next attempt by the operators at levitation, her whole trunk swung forward and the table dropped. It was obvious that during the phenomenon her body was being pulled forward. I told her to grip the back rail of the weighing machine with both hands to see if this would prevent her being carried away; but during the next attempt at levitation under these conditions the whole platform of the machine with medium on it tilted over, as far as it could go, in a forward direction.

Finally, seeing that there was no doubt whatever that the machine was tending to overturn, I got the medium's father (who sits on her left) and her brother-in-law (who sits on her right) each to press back on one of her shoulders, while

32 EXPERIMENTS IN PSYCHICAL SCIENCE

she herself gripped tightly the back-rail of the machine, and placed her feet as far back on the platform as she could. We then obtained a levitation lasting for about 10 seconds.

Weight of levitated body	Reaction on the medium due to the levitation
38 lb. 1 oz. (table + 30-lb. wt.) ..	<u>44 lb. 8 oz.</u>

It is to be remembered that in this case the medium was not isolated, but had her shoulders held back by two of the sitters as explained above, so that the 44 lb. 8 oz. is not due to the weight of the levitated body alone, but is accounted for in part by muscular pressure.

The main and important result of this experiment is that for the first time a capsizing moment was observed on the medium, due to the levitated body.

During the actions which were occurring upon her, the medium felt no kind of pressure upon any part of her body. It is correct to say, that she felt nothing at all, except an irresistible impulse to move off the weighing machine. She described the feeling as similar to that felt if she were sitting on a see-saw, the end of which rose and impelled her forward.

EXPERIMENT 2: *Observations on the capsizing effect on the medium during levitation when she sits on her ordinary chair placed on the floor.*

The medium sat on her usual chair, which was standing on the floor, i.e., the chair was *not* placed on the platform of the weighing machine. She sat perfectly still with her hands on her knees, and was thus isolated from all the members of the circle. I asked her to remain quite passive and to report her sensations to me.

The weight of the table was 7 lb. 14 oz.

While the table was levitated I placed three 10-lb. weights upon it in succession, making a total levitated load of 37 lb. 14 oz. The table did not descend to the floor between the loadings to allow me to put on the additional weights (as in Experiment 1) but remained up the whole time.

Up to a total levitated weight of 37 lb. 14 oz. there was no very pronounced effect on the medium. Her trunk, however, swung gently forward with the heavier weights and she said she felt herself being urged forward, though she felt no kind of mechanical pressure on her body.

I then increased the weights on the levitated table two pounds at a time up to 36 lb. (total weight including the table 43 lb. 14 oz.). Sev-

eral times did the medium's body then swing strongly forward, upon which the table dropped. I, therefore, told her to hold on with her hands to the arms of her chair. I placed an additional 4-lb. weight on the table (total including the table of 47 lb. 14 oz.). When the table levitated the medium's chair tilted forward on its two front legs and the table dropped.

As this dead weight of about 48 lb. seemed to be near the limit for this sort of levitation, I removed the weights. The table then levitated alone and I pressed downwards with considerable force upon it.

On some occasions (I made the experiment many times) while I was pressing strongly downwards, the medium's body tilted forward and on other occasions it did not. She told me that when she did *not* move forward, she felt no inclination to tilt at all, and when she *did* move forward, she simply could not help herself, although she felt no mechanical pressure on her body. This alternative tilting and non-tilting of the medium's body (the two phases occurred in alterations with succeeding levitations) took place so often that I suspected the operators were trying to bring something to my notice, so I asked them if the levitating structure was sometimes a true cantilever, i.e., no part of it touching the floor, and sometimes *not* a true cantilever, i.e., with the free end resting on the

floor under the table. They vigorously assented to this and demonstrated for my benefit. I said, "I want you to levitate the table with a true cantilever and I will press down hard on the table." They immediately produced levitation and I found that on all occasions of making the proviso about the structure being a true cantilever the medium felt an inclination to overturn and her body swung forward. I then said, "Levitate the table not with a true cantilever, but let the end of it rest on the floor immediately under the table, so that the column forms a kind of prop between table and floor" (see figs. 8 and 9). They then produced levitation, and on all such occasions of the phenomenon under this proviso the medium felt no inclination to overturn when I pressed down vigorously, and her body was not moved.

The operators say that at demonstration séances they rest the end of the cantilever upon the floor immediately under the table, so that when a strong man stands over the levitated table, and exerts great pressure upon it, the medium is protected from the large reaction forces, the latter in this case being on the floor instead of on her body.

The operators also say, that they much prefer to work with a true cantilever, for, when they have to rest the end of it upon the floor, the

structure is badly strained and much energy is required to maintain its rigidity.

Therefore, for all moderate weights, say up to about 30 lb., a true cantilever is employed, and for greater and variable forces, a supported



FIG. 8.

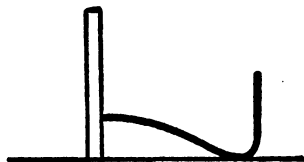


FIG. 9.

cantilever. Figs. 8 and 9 show the two processes diagrammatically.

EXPERIMENT 3: *Effect of base of cantilever column resting on pressure recorder.*

Proof of the operators' statement given in Experiment 2 that they can rest the bottom end of the columnar part of the cantilever upon the floor under the table and thus throw most of the reaction upon the floor, instead of upon the medium, when large forces are involved.

The weight of the table used was 12 $\frac{1}{4}$ lb.

I got a pressure recording apparatus constructed, shown diagrammatically in Fig. 10 which is an end elevation.

A and B are two thin pieces of wood each about 4 inches square. The top piece A can



FIG. 10.

move up and down on four vertical pins, two of which are shown at E and F, against the pressure of light springs. Two pieces of brass C and D, shaped as shown, are fixed to A and B respectively and are placed in an electric bell circuit. The consequence is, that when a downward force is exerted on A, the contacts C and D come together and the bell rings.

I said to the operators, "You say that you have two methods of using the cantilever, (1) where you do not allow it to touch the floor and (2) where you let the bottom of the column touch the floor in order that the floor may take up some of the reaction and thus protect the medium, especially when a man stands over the table and uses great muscular force. I wish to test this statement of yours."

I placed the pressure tester on the floor under the table. The height of the tester was about 2 inches. The medium was seated on the weighing machine. I told the operators to levitate the table with a true cantilever. The table levitated, during which the bell did *not* ring.

Weight of medium + chair + board before levitation.....	= 138 lb. 8 oz.
Weight of medium + chair + board during steady levitation.....	= 150 lb. 4 oz.
<i>Increase</i> in weight of medium due to levitation of table.....	= 11 lb. 12 oz.
Weight of table.....	= 12 lb. 4 oz.

The two facts that the bell did not ring and that the reaction on the medium was approximately equal to the weight of the table, show that the levitating structure must have been an unsupported cantilever.

I then said to the operators, "I wish you to show me the second method of levitation. Please levitate the table so that the bottom end of the column part of the levitating cantilever rests on the pressure recorder (it was on the floor under the table) all the time the table is in the air."

Result.—After one or two futile attempts the levitation was several times accomplished. The bell always rang several seconds before levitation occurred. as though the preliminary process was the firm anchoring of the bottom of the column to the pressure recorder on the floor. While the bell was continuously ringing and the table was steadily levitated, I took the medium's weight.

Weight of medium + chair + board before levitation.....	= 138 lb. 8 oz.
Weight of medium + chair + board during levitation.....	= 135 lb. 8 oz.
<i>Decrease</i> in medium's weight due to levitation.....	= 3 lb.
Weight of table.....	= 12¼ lb.

Thus it will be seen that the statement of the operators was correct. It is now obvious that when a strong man stands over the levitated table and presses down on it and pushes it about, that the reaction is taken on the floor. As already stated, however, the operators for some reason or other dislike this method and always use an unsupported cantilever where possible.

EXPERIMENT 4: Impression on modeller's clay of bottom of cantilever column.

I brought a little box filled with soft clay to the séance room, and said to the operators, "You remember some time ago when we were investigating the methods by which you levitate the table, I found that if necessary you could levitate it by putting the bottom end of the columnar part of the cantilever on the floor immediately under the table, so that it forms a kind of prop?" (See Experiment 2.) Answer—"Yes." "Well, I am going to place this box of soft clay under the table and I want you to levitate the table by this method—only, instead of the bottom end of the columnar part of the cantilever pressing on the floor, I wish it to press on the clay; i. e., I wish an impression on the clay of the bottom end of the column." The operators said they would try to do what I desired. I placed the box of clay immediately under the table and

waited. In a very short time the table levitated immediately above the clay, the levitation lasting about a dozen seconds. At its conclusion I examined the clay. There was a large irregularly shaped impression on it, the length one way being about 3 inches and the other 2½ inches. A number of such impressions will be examined in detail in a later book dealing with the structures.

EXPERIMENT 5: *Effect on medium's weight when experimenter presses downwards on levitated table.*

I had often wished to discover experimentally the effect on the medium's weight when an experimenter stood over the levitated table and pressed downwards on it—not that I had much doubt as to the result, for I considered that muscular downward pressure was simply equivalent to increasing the table's weight.

My wife having entered the circle, I asked the operators to levitate the table, which they did. I then told my wife to grasp the ends of the table and to press downwards uniformly and without jerks.

DATA:

Weight of table.....	=	8 lb. 1 oz.
Weight of medium + chair + board before test.....	=	135 lb. 8 oz.

While my wife was pressing downwards as uniformly as possible on the levitated table, the weight of the medium + chair + board rose to, and kept fairly steady at, 155 lb. Increase in medium's weight due to muscular downward pressure on top of the levitated table and to the weight of the table itself = 155 lb. — 135 lb. 8 oz., = 19 lb. 8 oz.

Subtracting the weight of the table (8 lb. 1 oz.) it is seen the muscular pressure exerted was probably 11 lb. 7 oz.

In this case it is obvious that a simple cantilever was used—the method preferred by the operators whenever possible. The total levitated weight would require to be considerably greater than 19 lb. 8 oz. in order to cause the medium to topple over (see Experiment 1).

EXPERIMENT 6: *Effect on medium's weight when the base of the cantilever rests on the scalepan of a spring balance under the levitated table.*

In R.P.P., Experiment 55, I have stated that I carried out an incomplete test with the medium sitting on a weighing machine and a compression balance at the same time below the levitated table.

I showed that while the table was levitated there was a large downward force (in compari-

son with the weight of the table) upon the balance. I asked the operators to drop the table suddenly, and upon this being done, the downward force on the balance instantly disappeared. Four seconds afterwards (or thereabouts) the steelyard of the weighing machine was heard to click against the stop and it was assumed that during the levitation, in addition to a downward force on the compression balance, there was also *increased* weight on the medium. The experiment was very incomplete and I had not an opportunity at the time of carrying it out thoroughly.

Certain data obtained in later experiments made me doubt the truth of the assumption that during the time there was pressure on the compression balance below the table, there was also increased weight on the medium. On further consideration I thought that this increase may have been due to a momentary jerk of the steelyard at the instant the table dropped and may not have been continuous over the period of the phenomenon. I therefore decided to investigate the point.

Fig. 11 gives a diagrammatic view of the apparatus used. W is the weighing machine, M the medium, T the levitated table, B the compression spring balance, C a metal clip fixed to the edge of the dial, P the pointer, and S, S, insulated wires (one fixed to the clip on the dial

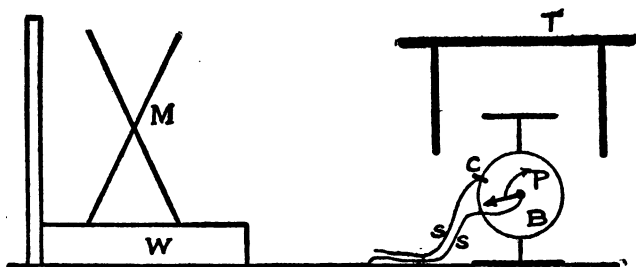


FIG. 11.

and the other to the centre of the pointer). The clip was insulated from the dial by pieces of brown paper. The idea was that when the pointer moved round sufficiently to touch the clip, an electric bell in the circuit would ring. Full details of a similar arrangement are given in R.P.P., ch. vii. I set the clip so that the bell would ring when there was a weight in the scalepan of just about 19 lb.

Weight of table.....	=	7 lb. 14 oz.
Weight of medium + chair + board before test.....	=	135 lb. 8 oz.
During steady levitation above the balance, with the bell vigorously ringing, the weight of medium + chair + board.....	=	122 lb. 12 oz.
Decrease in medium's weight during levitation.....	=	12 lb. 12 oz.

It is therefore seen that the assumption derived from the unfinished Experiment 55, R.P.P., was wrong and that the increase in weight then noted was probably due to a "kick" of the steel-yard owing to the sudden drop of the table. On

this occasion I took care to have the table descend gently and almost imperceptibly to the floor.

Note.—The scalepan was pressing vertically upwards on the end of the cantilever with a pressure somewhat greater than 19 lb. (the apparatus was set at 19 lb., so that good electric contact would be made and the bell ring vigorously) but judging from the experiments described in R.P.P. the magnitude of this upward pressure would be in the neighbourhood of 21 or 22 lb. The downward weight of the table on the end of the cantilever was approximately 8 lb., so that there was probably a net upward force on the end of the cantilever of between 13 and 14 lb. The diminution in weight of the medium of $12\frac{3}{4}$ lb. seems suspiciously close to this.

EXPERIMENT 7: *Effect on medium's weight when the base of the cantilever rests on the scalepan of a spring balance under the levitated table.*

The medium was seated on the weighing machine and a compression balance was placed under the table. I wished to take simultaneous readings of the medium's decrease of weight and the reading on the balance during levitation above the balance.

The weight of the table used was 7 lb. 14 oz.

In the first place, during levitation of the table I took the reading on the balance. It was $121\frac{1}{4}$ lb. (practically the same for two levitations). I then went over to the weighing machine and said to the operators, "During the next levitation, I wish you to put the same pressure on the balance as you had on it when I was reading it just now." They said they understood what I meant, and would do what I asked.

The table then levitated and I took the medium's weight.

Weight of medium + chair + board before levitation.....	= 138 lb. 8 oz.
Weight of medium + chair + board during levitation.....	= 137 lb. 14 oz.
Decrease in weight of medium due to levitation.....	= 10 oz.

It is obvious that there is no certainty that the reading on the balance while the table was levitated the second time was the same as when I read it. There may have been a few pounds difference.

EXPERIMENT 8: *Effect on medium's weight when the base of the cantilever rests on the scalepan of a spring balance under the levitated table.*

Medium on weighing machine and compression balance below table. In this experiment

my wife took the reading on the balance during levitation, while I simultaneously took the weight of the medium.

The weight of the table used was 8 lb. (approx.).

TEST A:

Reading on balance.....	= 23¾ lb.
Reading on weighing machine.....	= 124 lb.
Decrease in medium's weight = $138\frac{1}{2}$ lb.	
— 124 lb.....	= 14½ lb.
Reading on balance — weight of table =	
$23\frac{3}{4} - 8$	= 15¾ lb.

TEST B:

Reading on balance.....	= 20 lb.
Reading on weighing machine.....	= 124 lb.
Decrease in medium's weight = $138\frac{1}{2}$ lb.	
— 124 lb.....	= 14½ lb.
Reading on balance — weight of table =	
$20 - 8$	= 12 lb.

TEST C:

Reading on balance.....	= 22 lb.
Reading on weighing machine.....	= 119¼ lb.
Decrease in medium's weight = $134\frac{1}{2}$ lb.	
— 119¼ lb.....	= 15¼ lb.
Reading on balance — weight of table =	
$22 - 8$	= 14 lb.

The results may be considered correct within a pound or so either way. I think the three tests show pretty conclusively that the pressure on balance minus weight of table equals decrease of medium's weight.

It is to be noted that the pressure on the balance is not always the same for the same relative position of table and medium (see Experiments 6, 7, and 8). This is probably due to the fact that the cantilever may issue from the medium's body at various heights.

The results of these experiments are very satisfactory as they solve several troublesome points. They indicate—

- (1) That the cantilever theory is correct so far as it goes.
- (2) That the cantilever method of levitation is but one method (though the most frequent one) for levitating bodies.
- (3) That for heavy bodies whose levitation would cause the medium to capsize, the levitating structure rests on or grips the floor underneath the levitated body or between it and the medium.

In my first series of experiments I have already said that no reaction was ever discovered on the floor, and that the levitated bodies were light ones. Accordingly it was assumed that a cantilever was always used. It may be just possible that the operators experimented in this simple way, so that I would not become involved with a mass of data which could not be classified, i. e., they used their simplest structure so that I could advance gradually and regularly.

I now return to Experiment 2 in which at a total levitated weight of about 48 lb. the medium's chair (on which she was sitting) tilted forward on its two front legs (fig. 12).

The dimensions of the seat of the medium's chair were approximately 17 ins. by 17 ins.

The distance of the centre of levitated table

48 EXPERIMENTS IN PSYCHICAL SCIENCE

from centre of front legs of medium's chair was approximately 21 inches.

The weight of the medium + chair was approximately 130 lb.

The moment of the levitated weight about the front legs of chair was $48 \times 21 = 1008$ lb.-in.

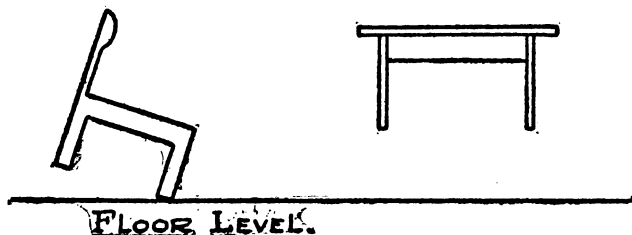


FIG. 12.

The breadth of the medium's chair was 17 inches. It is somewhat difficult to say exactly where the centre of gravity of medium and chair would be, but it would certainly be a greater distance than half way along the seat. Supposing that the C.G. was 10 in. from front legs, we have the moment of weight of medium + chair about the front legs $130 \times 10 = 1300$ lb.-in.

The values of these two moments are sufficiently close to support the theory that a cantilever was in this case used to levitate the table.

THE MECHANICS OF THE PHENOMENA

CASE I

A force W acting as shown at the end of a cantilever. M , medium; S , weighing machine.

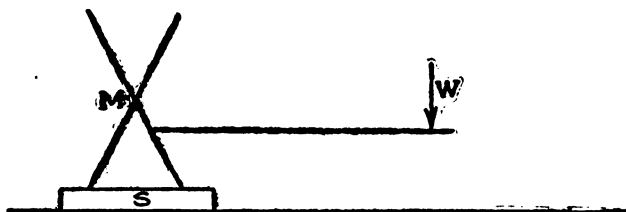


FIG. 13.

The weighing machine will indicate increased weight = W .

This is the case which occurs when light articles are levitated.

CASE II

Two oppositely directed forces acting as shown at the end of the cantilever.

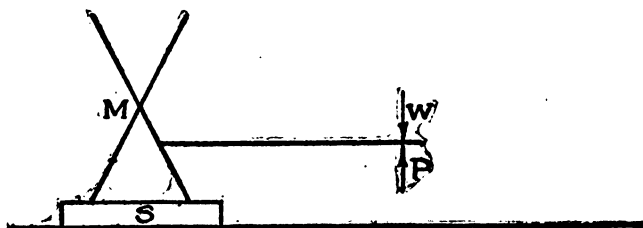


FIG. 14.

(b) If P is greater than W the weighing machine will indicate increased weight $= W - P$.

(b) If P is greater than W the weighing machine will indicate decreased weight $= P - W$.

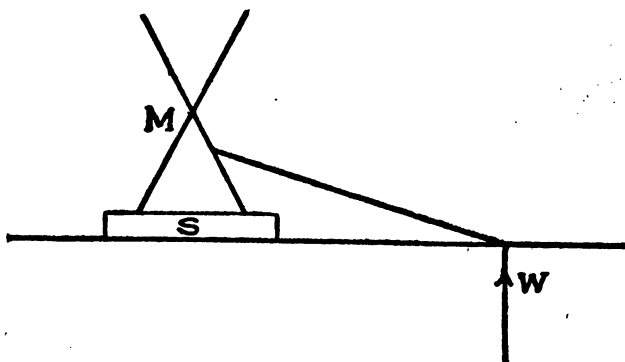


FIG. 15.

This (b) is what occurs when the psychic cantilever rests on top of the spring balance (see Experiments 7 and 8).

CASE III

When the cantilever presses downwards on the floor with a vertical force W , the weighing machine will indicate decreased weight $= W$.

This is the case that occurs when the table rests on the floor either upright or upside down and its weight is psychically increased. (See Experiments 10 and 11.)

EXPERIMENT 9: *Upside-down levitation of the table.*

If the table is placed upside down on the floor, the operators are unable to levitate it directly, i. e., they cannot raise it straight upwards into the air. They have to tilt one end of it at a considerable angle, evidently for the purpose of getting their levitating structure under the surface, and such a levitation is extremely difficult and rare.

Seeing that a vertical rise from the floor was impossible, we thought of holding the table a foot or so in the air in an inverted position, to see if the operators could get their structure under it, and, providing they could do so, keep the table levitated upside down. Accordingly, the table was lifted and held by the legs about twelve inches above the floor, when the operators immediately pressed upwards upon the inverted surface and evidently tried to grip it. It was obvious they were experiencing trouble in getting a proper balance. In a short time they were successful, for on the legs of the table being released, the table remained levitated upside down; this occurring on two occasions, the last levitation enduring for about a minute.

The table was not simply supported by an upward force on its surface; it was gripped. This

was apparent when the experimenter pushed over on the legs during the levitation, for a fairly strong resistance was encountered.

The fact that before a direct upside down levitation can occur from the floor, the table has to be held off the floor is very strong presumptive evidence that space is required to get the levitating structure under the surface, and hence that the structure is a real physical entity.

The difficulty of obtaining a balance, referred to above, was evidently due to the centre of gravity of the inverted table being *above* the surface, i. e., above the place where the levitating force was applied.

EXPERIMENTS ON INCREASED WEIGHT OF TABLE DUE TO PSYCHIC ACTION

EXPERIMENT 10: *Effect on weight of medium when table's weight is psychically increased.*

I have already mentioned (R.P.P., ch. iv) that when the table stands upright within the circle space, it can be made so heavy that it can only be lifted with difficulty. I wished to see the effect on the medium's weight when the table was thus affected.

I asked the operators to make the table very heavy. My wife having entered the circle, tried to lift the table but found that its weight had

been greatly increased. I told the operators to keep the new weight as steady as possible while I was taking the readings.

Weight of table.....	= 7 lb. 14 oz.
Weight of medium + chair + board before the test.....	= 135 lb. 8 oz.
Weight of medium + chair + board during the test.....	= 115 lb. 8 oz.
<u>Decrease in weight of medium due to the table's weight having been in- creased.....</u>	<u>= 20 lb.</u>

EXPERIMENT 11: *Effect on weight of medium when table's weight is psychically increased.*

In R.P.P., ch. iv, I have told how, if the table is placed upside down on the floor, its weight can be so increased that when an experimenter grasps it by the legs he finds great difficulty in raising it. The table, in fact, appears to be "glued" to the floor. I wished to find what happened to the medium's weight during the occurrence of the phenomenon.

The weight of the table was 7 lb. 14 oz. It was turned upside down within the circle space, and I told the operators "to glue it to the floor." This they did and my wife grasped it by the legs from time to time and tested if it was fixed. I asked the operators to fix it as steadily as possible and to keep the fixing force constant while I was taking my observations.

54 EXPERIMENTS IN PSYCHICAL SCIENCE

Weight of medium [†] + chair + board before the test.....	= 135 lb. 8 oz.
Weight of medium + chair + board during the test.....	= 100 lb. 0 oz. [‡]
<u>Decrease in medium's weight due to the "glueing" of table to floor....</u>	<u>= 35 lb. 8 oz.</u>

This was the maximum steady loss of weight.

I also told the operators to "glue" the table to the floor with various degrees of strength and on each occasion I found that the medium lost steady amounts of weight during the occurrence of the phenomenon (less, however, than the 35½ lb. recorded above).

EXPERIMENT 12: *Effect on weight of medium when table's weight is psychically increased.*

The medium was sitting on the weighing machine. I turned the table (weight 12¼ lb.)

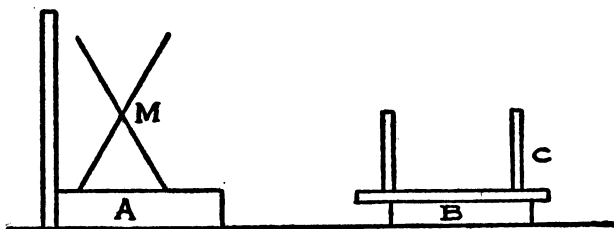


FIG. 16.

upside down and placed it on the platform of a smaller weighing machine on the floor within the circle. Fig. 16 represents the arrangement where A and B are the two weighing machines, M the medium and C the table.

I set the second machine so that it would balance at 28 lb. I said to the operators, "I want you to 'glue' the table to the platform, i. e., to press down on the table so that the lever of the machine shall just balance." In a very short time they did this. I had to tell them once or twice to add a little or subtract a little force, but when once obtained it was marvellous how steadily they could maintain the correct amount. I then went over to the weighing machine on which the medium was seated. My wife placed her fingers on the lever of the smaller machine and told me when the balance was just about correct, and simultaneously I took the medium's weight.

Weight of medium + chair + board	
during experiment.....	= 121 lb.
Decrease in medium's weight =	
138½ lb. - 121 lb.....	= 17½ lb.
Downward force on table = 28 -	
12¼.....	= 15¾ lb.

The result may be considered correct to a pound or so either way.

These experiments pretty well clear up the doubtful points about temporary increased weight of the table. It is evident that when the table's weight is increased, with the table either standing upright or resting on the floor upside down, (1) the medium loses weight, (2) her loss of weight is practically the same as the increase of weight given to the table. This is as it should

be if a psychic arm from the medium grips some part of the table with its free end and then presses or pulls down upon it.

METHODS BY WHICH THE PSYCHIC CONNECTING ROD IS USED FOR VARIOUS PHENOMENA

EXPERIMENT 13: *Effect of the phenomena on the medium when she is seated on bicycles.*

I was anxious to discover what would happen to the medium if she were seated on a freely-running truck or something of that sort, while levitation was occurring, or while the table was being moved about the floor; was being pushed, pulled, and so on. As the simplest means of obtaining the kind of apparatus I wanted, I fixed two bicycles together and tied a piece of flat wood boarding across the mudguards of the rear wheels. The board was for the medium to sit upon. The bicycle combination was placed lengthwise along the floor of the séance chamber. Very little force was required to move it to and fro.

I arranged with the operators that the medium should sit on her ordinary chair until "power" was sufficiently developed, and that they should give three raps when they were ready for me to proceed with the experiment. In about a quarter of an hour, the summoning taps

being heard, the medium discarded her usual chair and sat on the board placed across the rear of the bicycles. Her feet could just reach the floor, but she could raise them when required and thus be completely free of the floor.

All the tests were carried out under two experimental conditions, (a) her feet just touching the floor, and (b) her feet off the floor, but so high was her seat that all the grip she could obtain with her feet on the floor was negligible and the results were found to be practically the same as those obtained when no part of her body was touching the floor. Her hands were lightly held by the sitters on either side of her, and, acting in accordance with my instructions, she sat perfectly still. I sat near her all the time.

Test A.—The operators were asked to produce levitation of the table.

The table was moved about the floor, an end was lifted, and various movements and shufflings went on for some considerable time, but complete levitation did not occur.

Result.—During the various movements of the table the bicycles were *strongly pulled forward towards the table*. I had to exert considerable muscular restraining force on them to prevent the motion, and give the table a chance to levitate, for as soon as the bicycles were actually allowed to move, the attempted levitations ceased. Levitation very nearly occurred, three

legs of the table being off the floor. Evidently the height of her seat and the generally awkward position of the medium prevented final success. My wife entered the circle and held the table a foot or so up in the air, upon which the operators took a powerful grip on its under-surface (which grip always synchronised with strong pull in of bicycles towards table) and levitation was almost obtained, for on my wife letting go, the table just fluttered to the floor.

In their endeavours to obtain levitation, the operators turned the table in all directions about the floor and tried at every angle.

During the steady tiltings (which were many) and nearly complete levitations, the bicycles were pulled in towards the table fairly strongly, but not so strongly as during some other movements, such as shufflings, jumpings, dancings, etc., of the table on the floor.

Test B.—The table was placed in an upright position on the floor and the operators were told to make it heavy, i. e., apparently to increase its weight. My wife entered the circle and tested the "heaviness."

Result.—Very strong pull in of bicycles towards table during the period of the phenomenon. The bicycles had to be restrained with much force. During one of my observations on this test (for each test I took from three to six observations) I told the operators to remove

the force (whatever its nature) *suddenly* from the table. This they evidently did, for no sooner had I made the request than the bicycles (which an instant before were being pulled in strongly towards the table) were released, and *jerked backwards a foot or so in the opposite direction* (this, of course, was due to the restraining pull I was exerting on them).

Test C.—The table was turned upside down on the floor and the operators were asked to “glue” it to the floor. My wife tested it on several occasions and found it was fairly strongly fixed.

Result.—During the phenomenon the bicycles were strongly pulled in towards the table.

Test D.—The table was placed upright on the floor near edge of circle and I told my wife to hold it by the legs and press it in strongly towards the medium. (This is a common test with visitors at a demonstration séance, for when the medium is seated on her ordinary chair resting on the floor, a strong man cannot push the table in towards her, and the surprising thing is that if a psychic rod connects the medium with the table, the medium is not pushed over). I told the operators to resist her as strongly as they were able.

Result.—On all the occasions of this test the bicycles moved backwards towards the far wall away from the table, i. e., in the direction my

wife was pushing. I made very sure of this result, taking observations at least six times.

While my wife was pushing the table it moved forward with her about a foot or eighteen inches, i. e., it kept its normal distance from the medium—about 3 feet—constant.

Test E.—Same as D with the exception that my wife held the table in the air and then pushed inwards on it, instead of letting it rest on the floor and pushing.

Result.—Bicycles moved back as in D, the table following the bicycles, the distance between them being approximately maintained.

Test F.—Table on floor as in D, only, instead of pushing hard *in* towards medium, my wife pulled as strongly as she could away from medium, the operators resisting her.

Result.—Bicycles moved in towards table, but not so strongly as they moved out in test D. The table also moved forward a foot or so, presumably to keep its distance from the medium as constant as possible.

Test G.—The table was held up in the air and pulled directly away from the medium, the operators resisting.

Result.—Bicycles moved in towards table, but not so strongly as they moved back in test E. Table also moved forward a foot or so under my wife's pull, evidently to maintain constant distance.

During one of the observations in this test, my wife gave a sudden wrench to the table, when evidently the connecting link gave way, for she instantly felt the opposing force vanish and simultaneously the bicycles jerked back a foot or so in the opposite direction, i. e., away from the table (this was due to the restraining force I was exerting).

EXPERIMENT 14: *Effect on weight of medium when the experimenter presses on the table in the direction of the medium.*

I had often noted that if the table stands upright on the floor at the edge of the circle directly opposite the medium and on the side remote from her, and an experimenter gets behind the table and presses on it directly towards her, he cannot move it if the operators so desire. I wished to find the effect on the medium's weight due to this phenomenon.

The weight of the table used was 7 lb. 14 oz. It was placed upright on the floor on the edge of the circle opposite the medium, and my wife grasped its two back legs and pressed inwards in a line with the medium and in a direction approximately parallel to the floor. She could not shift the table a fraction of an inch.

62 EXPERIMENTS IN PSYCHICAL SCIENCE

Weight of medium + chair + board before test	= 135 lb. 8 oz.
Weight of medium + chair + board while my wife was pressing on the table as steadily as possible.....	= 119 lb. 12 oz.
<u>Decrease in medium's weight due to the push.....</u>	= <u>15 lb. 12 oz.</u>

EXPERIMENT 15: *Effect on weight of medium when the experimenter presses on the table away from the medium.*

Medium on weighing machine and table up-
right on floor near edge of circle remote from
medium.

My wife *pulled* steadily on the table away
from medium, the operators resisting.

Weight of medium + chair + board before pull	= 138½ lb.
Weight of medium + chair + board during pull	= 143½ lb.
<u>Increase of medium's weight due to pull.....</u>	= <u>5 lb.</u>

After the reading was taken my wife suddenly
pulled with all her strength and consequently
more or less jerkily. The whole weighing ma-
chine, with medium, chair, and board, moved
three or four inches along the floor in the direc-
tion of pull (the weighing machine was sup-
ported on four little wheels).

In order to verify the results of Experiment
14, my wife then pushed the table towards me-
dium, the operators resisting. While the push-
ing force was being exerted there was always a

decrease of a few pounds in the medium's weight. Also, on one occasion the whole machine moved back several inches in the direction of push.

EXPERIMENT 16: How the psychic rod acts when a man, though exerting all his strength, is unable to push the table (standing on the floor, two or three feet in front of the medium) inwards towards the medium.

It is obvious that if the psychic rod (or rods) issued straight from the medium's body and gripped the near legs of the table, the medium

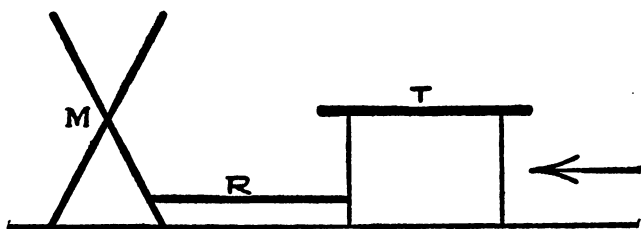


FIG. 17.

and the chair on which she was sitting would be bodily pushed back when a man (or two men) stood behind the table and pushed horizontally inwards on it with all their strength.

Fig. 17 will make this clear. M represents the medium sitting on her chair, T the table standing on the floor some distance from her, and R a psychic rod issuing from above the ankles of the medium and gripping a near leg of the table

and thus forming a strut. The arrow shows the direction in which a man pushes. This is undoubtedly the method used when only a comparatively light pressure is exerted on the table, for in this case the friction of the bottom of the legs of the medium's chair on the floor is sufficient to prevent it (and her) being pushed back. (If the reader will turn to Experiment 13 he will find that when the medium was seated on the bicycles, instead of her chair, the bicycles moved back when force was exerted on the back of the table, showing that simple straight rods in all probability connected the medium with the table in that case.) But when really great force is exerted, such as when two or even three men push together, it is perfectly apparent the medium and her chair would be pushed back bodily, but this, as a matter of fact, never happens. So it was obvious to me that for large forces there must be a modification of the psychic rods connecting medium with table; the reaction must be taken to a large extent by the floor, i. e., the rods must touch the floor somewhere.

When questioned, the operators said that for comparatively light pressures, the simple straight rods are used, and that for great pressures the rods issuing from the medium proceed to the floor, and then go from the floor to the near legs of the table.

I asked them whereabouts on the floor the pressure was exerted and moved my hand about in front of the medium until the approximately correct position was reached, this being indicated to me by raps. This position was imme-

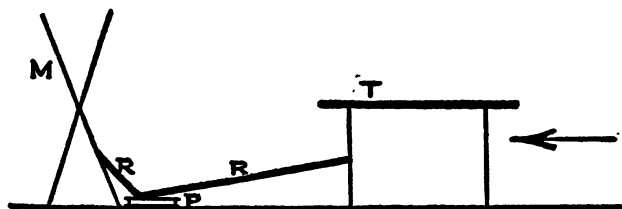


FIG. 18.

diately in front of the medium's feet. I placed the pressure recorder (see Experiment 3, fig. 10) on the floor there just in front of one of her feet and asked the operators to exert their pressure on the recorder instead of on the floor. In a short time the bell rang and while it was ringing I pushed strongly inwards on the back of the table and found I could not move it. The experiment was carried out three or four times.

Now, I have proved to my satisfaction by a multitude of observations that the psychic rod issues usually from the neighbourhood of the medium's ankle. Hence it follows that the path of the psychic rod is approximately as shown on the diagram (fig. 18), where M is the medium, T table, P pressure recorder on the floor, and RR the two parts of the psychic rod. In other

words, a short strut projects from the medium's ankle to the floor, and from the floor rises at a small angle and grips a near leg of the table.

Although I only tested for one rod, without doubt a rod issues from each ankle of the me-

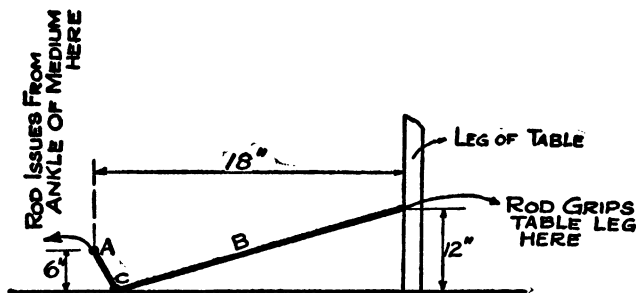
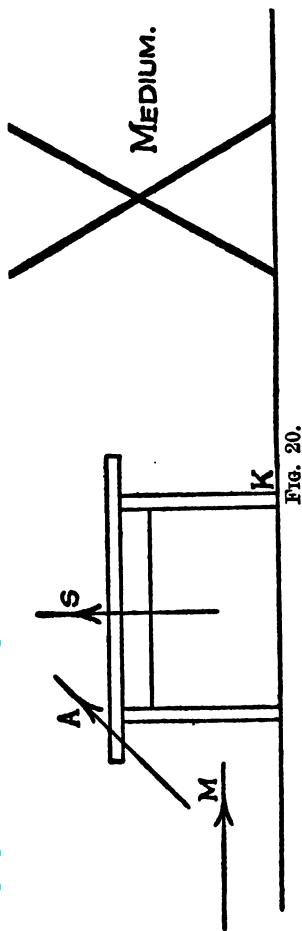


FIG. 19.

dium and each grips one of the near legs of the table. It does not simply press on the legs, but grips them, as can easily be discovered by manipulating the table in various ways. A large downward force must be exerted along the limb AC (fig. 19), which makes the part C of the rod (where the direction changes) grip the floor strongly. At C the direction alters, and B is a strut connecting C with the leg of table. The consequence is that when muscular force is exerted on the table in direction of medium, B strongly resists the table's motion. The part B may bend a little but I have never known it to give way.

THE TABLE RESTS ON THE FLOOR SEVERAL FEET DISTANT FROM THE MEDIUM. THE EXPERIMENTER ATTEMPTS TO PUSH IT IN ALONG THE FLOOR TOWARDS THE MEDIUM, THE OPERATORS RESISTING. SOME GENERAL OBSERVATIONS.

- (a) Exerting a push along directions about parallel to A (fig. 20) I found that the table was quite easily turned about K, the foot of the front legs.
- (b) Considerable force exerted parallel to the floor, such as M, could not make the table budge an inch.
- (c) When I applied a vertical force, such as S, I found that the table could be easily moved upwards, though it did not feel free but seemed to be sliding or slipping



through some kind of a surface which was gripping the front legs.

- (d) Attempts to push the table horizontally sideways were strongly resisted.

There is little doubt that the front legs of the table were gripped a few inches above the floor. Probably in this case two straight psychic rods joined the legs of the table straight to the ankles of the medium.

An ordinary push in direction M would not be sufficient to make the medium and her chair move along the floor against friction and the reaction would therefore not require to be taken on the floor, and I have found by experience that the operators always use the simplest mechanism consistent with the successful production of the phenomenon desired.

AN INCIDENT

An experimenter was inside the circle space and the table was levitated. He was anxious to experience the various psychic resistances to applied forces. Accordingly, he pushed down on the table and felt the elastic resistance to levitation and he pushed inwards towards the medium and felt the rigid resistance (see Experiment 19, R.P.P.).

He then asked the operators to place the table on the floor and to prevent him pushing it in-

wards towards the medium. The table descended to the floor. As soon as it reached it the experimenter heard a sucking noise on the under-surface as though a kind of sucker there was relaxing or changing its grip and simultaneously the same kind of noise on each front leg as though suckers were taking hold there. The light was quite good, and there was nothing to be seen.

We asked the operators whereabouts on the table they had their grip and they immediately gave audible demonstration by rapping on each front leg and on the under-surface.

They said they had three psychic arms out in this particular case.

They also declared that they can have as many as six arms or rods out at one time.

DIRECT DOWNWARD PUSH ON SCALEPAN OF BALANCE

EXPERIMENT 17: *Downward psychic pressure on scalepan of balance,*

The compression balance with its electrical attachments (as described in Experiment 6) was placed on the floor within the circle and the table was moved aside. The balance was adjusted so that the electric bell would ring when a downward pressure on the scalepan of just about 19

lb. was reached. I asked the operators to press on the scalepan and ring the bell, which they did with great ease. To find the effect on the medium's weight:

Weight of medium + chair + board before test.....	= 135 lb. 8 oz.
Weight of medium + chair + board during the ringing of the bell.....	= 115 lb. 8 oz.
<u>Decrease in medium's weight while</u> <u>the bell was ringing and while,</u> <u>therefore, there was a pressure of</u> <u>at least 19 lb. on the scalepan</u>	= <u>20 lb.</u>

It is unlikely that the operators would press on the scalepan with a force much in excess of that necessary to ring the bell; hence the correspondence between the weight lost by the medium (20 lb.) and the downward force required to ring the bell (19 lb.) is suggestive.

**THE PSYCHIC MECHANISM EMPLOYED WHEN THE
MEDIUM AND THE CHAIR ON WHICH SHE IS
SITTING ARE BODILY MOVED ABOUT THE FLOOR
OF THE SEANCE ROOM.**

I propounded the problem some time ago in *Light* as to the method employed by the operators in sliding the medium and the chair on which she is sitting about the floor of the room. I asked for an indication likely to lead to a solution of the mystery, but none reached me, and I was not surprised. I was never able myself to

form a satisfactory conception as to how the thing was done.

The solution of this problem, in addition to the knowledge of psychic things which it gives us, throws some light on what the operators are able to tell us concerning the *modus operandi* of their phenomena. For this is one of the few cases in which they have informed me beforehand of certain definite facts. Their statement was a little vague, but was correct in its main points, as I will show later.

The following is the explanation of the operators, obtained from them after a deal of questioning and cross-examination:—The medium is sitting on her chair. From each of her ankles there issues a psychic rod which inclines downwards gradually to the floor within the circle. It grips the floor at the place of contact. Out of this inclined rod there issues a branch rod or arm which pushes backwards on a front leg of the medium's chair. There are two inclined rods—one from each ankle of the medium—and therefore two projecting arms which together exert sufficient force on the front legs of the chair to push it bodily along the floor.

EXPERIMENT 18: *Movement of medium and chair along the floor.*

I obtained four little metal gliders, and hammered them into the feet of the medium's chair,

so that it could slide more easily and uniformly along the floor than was the case without them. The only other apparatus was a piece of fairly stiff pasteboard about twelve inches long by eight inches wide. I informed the operators that I would first see if there was any downward force on the floor in front of the medium while the medium and her chair were being moved backwards. Accordingly I placed the piece of pasteboard flat on the floor beneath the table (which was standing within the circle), holding the end of it remote from the medium in my fingers. I could thus easily tell if any downward force was being exerted on the pasteboard by the difficulty I would experience in endeavouring to lift it from the floor. I asked the operators to proceed with the test.

Nothing happened for a considerable time, and I was beginning to think that the explanation of the operators was incorrect when they informed me, by raps, that an aura from my hand, holding the end of the pasteboard, was interfering with the phenomenon. On asking if I should put on gloves, they answered in the affirmative, and I accordingly did so. In a short time the chair and medium began to slide slowly backwards along the floor.

During the whole period of the movement there was a great downward force on the pasteboard—so great, in fact, that I was quite unable

to raise it from the floor, although I tried my hardest. I carried out the experiment again with a like result. The medium's chair slid back altogether a foot or so, but the location of the downward force did not seem to change, i. e., to recede with the chair. It thus appeared that the first part of the operators' statement that a rod issuing from the medium inclines downwards to the floor in front of her, where it presses on and grips the floor strongly, has some basis in fact.

I then went over beside the medium and placed the piece of pasteboard vertically against one of the front legs of her chair, resting the lower edge on the floor. While the medium and her chair were being slowly moved backwards along the floor, I found that there was a great horizontal force exerted on the pasteboard and through the pasteboard on to the leg of the chair. So great was the force that, while it was being exerted, I was quite unable, although I tried several times, to remove the pasteboard from its position against the leg of the chair. The force appeared to be exerted horizontally on the leg quite low down—not more than an inch or two above the floor. It thus seemed that the second part of the operators' statement, that pressure is exerted directly on the front legs of the chair, is correct.

I next placed the medium's chair on the top of a drawing-board resting on the platform of a

74 EXPERIMENTS IN PSYCHICAL SCIENCE

weighing machine. After some futile attempts the operators succeeded in sliding machine, board, chair and medium quite easily along the floor. The motion at my request was made slow and prolonged.

READINGS

Initial weight of medium + chair + board.....	= 133 lb.
Weight of medium + chair + board while the machine was being fairly steadily moved along the floor....	= 85 lb.
Decrease in weight of medium.....	= 48 lb.

The pushing force was exerted on the chair and not on the front of the weighing machine



Fig. 21,

because the chair was several times pushed off the platform during the preliminary attempts, and on the successful occasions it always moved back of itself until it was against the backrail of the machine.

Fig. 21 indicates what I consider a provisional deduction from the above facts.

R is a straight psychic rod which grips firmly the floor at K and pushes directly on the chair

leg at D. The rod is "fed" at F by a "feeder" proceeding from the ankle A of the medium.

It is pretty obvious that the inclined rod R grips the floor at K, and does not merely rest upon it, for in the latter case it would inevitably be pushed along the floor while pressure was exerted on the chair leg. I have stated that the downward force was so great on the pasteboard when it was on the floor at K that I could not raise it the merest fraction of an inch from the floor; and further, the force seemed to be exerted at the far end of the pasteboard (with reference to my position)—i. e., the psychic rod was evidently not only pressing on the pasteboard, but was gripping the floor round about the edge of it as well.

The fact that the inclined rod at its floor end actually grips and does not merely rest on the floor was audibly demonstrated. Several times during the preliminary attempts to move the weighing machine and medium, the end at K was evidently torn from its hold on the floor, for a sharp, shuffling noise was heard on two occasions resembling the noise likely to be made by the forcible pulling from its grip of a plastic gripping material. And this occurred at moments when I was just expecting the machine to move.

Let us consider the results obtained with the weighing machine.

In Fig. 22 the rod R is shown, fixed to the floor at K, and inclining upwards to the leg of the chair (resting on the platform of the weighing machine) at D. The force P is exerted in the direction of the arrow. The height of D from the floor is about 9 inches. (The platform and board, the latter not shown on the diagram,

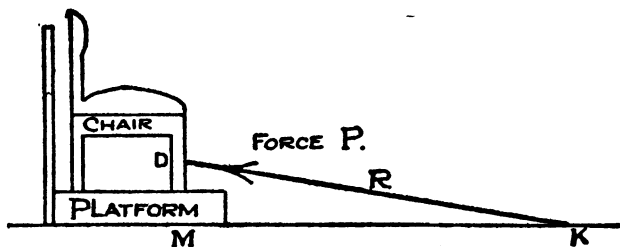


FIG. 22.

are together $7\frac{1}{2}$ in. in height, and $1\frac{1}{2}$ in. are allowed for the rod to obtain sufficient clearance. I showed that the pushing force on the leg is applied only an inch or two from its foot.) The distance MK is about 24 in., M being the projection of D on the floor. The pushing force P at D can be resolved into two components, a vertical and a horizontal one. With the distances as given the vertical component is $\frac{9}{24}$ times the horizontal, and the horizontal component is the one which overcomes the friction and moves machine and load slowly along the floor.

By direct experiment I found that with Mr.

Morrison sitting on the machine, the horizontal force required to move machine, etc., slowly along the floor was 28 lb. (of course the force varied somewhat, but that was the maximum value while the machine was moving slowly along; the starting force was about 32 lb.). Now the medium weighs about 14 lb. less than Mr. Morrison, so that if we say the horizontal force required is 28 lb., we are on the safe side.

The vertical component of the pushing force P , being $9/24$ of the horizontal component, works out at $9/24 \times 28 = 10\frac{1}{2}$ lb.

Now the vertical component of P decreases the weight of the medium. While the machine, etc., are moving slowly back the medium's weight should therefore decrease by about $10\frac{1}{2}$ lb. Even if MK be supposed equal to MD (fig. 22) the very limit conceivable, the medium's weight should only decrease by 28 lb. (These values are maximum and do not take account of decrease of friction due to the upward component of P .)

But we find that while the machine, medium, etc., are being pushed back steadily and slowly, the medium really loses 48 lb. in weight,

It follows, I think, that her loss of weight is not wholly accounted for by the vertical component of the force P . How, then, can it be accounted for? Most probably by the fact that the psychic rod R contains matter removed from

the medium's body, i. e., that an integral part of the rod is matter from the medium's body.

I think, also, that this experiment indicates that the operating entity in this case works from outside the medium's body.

THE QUESTION OF MATTER ABSTRACTED FROM THE BODY OF THE MEDIUM. MATTER USED IN THE CONSTRUCTION OF THE PSYCHIC RODS AND CANTILEVERS.

Recent research has given the following results:

A drawing-board was placed on the platform of a weighing-machine and a chair was placed on the top of the board. The medium (Miss Goligher) sat on the chair, with her feet resting on the board.

EXPERIMENT 19: *Psychic matter used for cantilever.*

I said to the operators, "You say the levitating cantilever contains matter from the body of the medium. I want you to take out from her body the matter you use in the construction of the cantilever you employ to levitate this table (weight 12¼ lb.) and to place this matter loosely on the floor—not to build up the cantilever, but simply to place the matter required

for it on the floor. Give three raps when you have done this."

The medium's weight began to decrease and in a few seconds became fairly steady. Then I heard the three raps, signifying that the operation was complete.

Result:

Weight of medium + chair + board before the experiment.....	= 138½ lb.
Fairly steady weight of medium + chair + board after the raps were given.....	= 122½ lb.
Decrease in weight in medium.....	= 16 lb.

It is noteworthy that when I carried out the same test about eighteen months previously, I obtained the same result within a pound or two. (See Experiment 63, R.P.P.)

EXPERIMENT 20: *Psychic matter placed on drawing-board.*

I asked the operators to put the matter they said they abstracted in Experiment 19, not on the floor, but on the drawing-board under the medium's chair (the drawing-board was resting on the platform of the weighing machine). They gave three raps when the operation was complete.

Result.—The medium's weight showed no difference from her normal of 138½ lb.

This, of course, is as it should be, as any actual

matter taken from her body and placed on the drawing-board would still be accounted for by the weighing-machine, provided that such matter was acted on by gravity in the normal way.

EXPERIMENT 21: *Psychic matter used for largest rapping rod.*

I asked the operators to take from the body of the medium the matter they use in the construction of the rod employed to give their loudest sledge-hammer blow and to place this matter loosely on the floor—not to form an actual rod, but just to place the matter contained within it on the floor. Three raps to be given when the operation was complete.

RESULT:

Weight of medium + chair + board before the test.....	= 138½ lb.
Weight of medium + chair + board when the three raps were given...	= 96½ lb.
<u>Decrease in weight of the medium...</u>	<u>= 42 lb.</u>

The result is correct to 2 lb. or 3 lb. The decreased weight could not be kept quite steady, there evidently being a strong tendency for the abstracted matter to fly back into the body of the medium. The operators appeared to experience much difficulty in keeping it outside on the floor, though they seemingly managed it for a period of from eight to ten seconds. Moreover, the medium became rather restless when

her weight greatly diminished, though up to a decrease of 20 lb. or so she did not move a muscle.

EXPERIMENT 22: *Psychic matter built up into a rapping rod.*

I asked the operators to make the matter they said they abstracted in Experiment 21 into a psychic rod, exactly similar to the rod they use to cause the sledge-hammer blow. I told them to rest the free end of this rod on the floor—not to press, but simply to rest it on the floor. The operators gave three raps when this was supposed to be done.

RESULT:

Weight of medium + chair + board before test.....	=	138½ lb.
Weight of medium + chair + board when the three raps were given...	=	99½ lb.
Decrease in weight of medium (cor- rect to 2 lb. or 3 lb.).....	=	<u>39 lb.</u>

EXPERIMENT 23: *Maximum weight of matter taken from medium's body.*

I asked the operators to take as much matter from the medium's body as they possibly could and to rest it on the floor. Three raps were given when this was supposed to be done.

Result:

Weight of medium + chair + board before test.....	= 138½ lb.
Weight of medium + chair + board when the three raps were given.....	= 84 lb.
Decrease in weight of medium (correct to 2 lb. or 3 lb.).....	= 54½ lb.

The weight decreased in fluxes, seemingly as though the operators were pulling the matter out against the action of something resembling a spring. After about the 30 lb. mark was passed the pulls on the medium's body were evidently severe, as she became somewhat restless. Sometimes, when the maximum diminution of weight was being approached, there were quick, jerky decreases of weight which could not be maintained and the lost weight flew back. But the loss of 54½ lb. given above (nearly half the medium's normal weight) was fairly held for eight or nine seconds while I was taking the reading. There were fluxes of 6 lb. or 8 lb. more than this, but they could not be held long enough to enable me to get a satisfactory reading. As I have said, it would seem that the matter was tending to be pulled back into the medium's body by something resembling a spring, for the more matter removed the stronger the restraining force became.

The above are a few of the results which are gradually leading me to the conclusion that the psychic rods which produce the phenomena are, for all their invisibility and impalpability, really

packed with matter, but matter which has taken on a form unknown to science.

EXPERIMENT 24: *To discover if there was any reaction pressure on the medium's chair, drawing-board under her chair, standard of the weighing machine, the floor round the weighing machine, or upon the surface of her body, when the table was levitated.*

The medium was seated on the weighing machine.

In order to test for mechanical pressure I employed the apparatus of Experiment 3 (fig. 10).

During periods when the table was steadily levitated, (a) I placed the pressure recorder on the drawing-board under the medium's chair, and moved it here, there, and all over it, sliding it right up to her feet (which were at rest on the drawing-board); then I raised it from the board into the air behind the calves of her legs.

Result.—No pressure indicated anywhere.

(b) I slid the pressure recorder all over the under-surface of the seat of the medium's chair.

Result.—No pressure indicated anywhere.

(c) I placed the pressure recorder on the standard of the weighing machine and on various other parts of the machine.

Result.—No pressure recorded anywhere.

(d) I slid the pressure recorder along the floor

right from the front of weighing machine platform to the region immediately below the levitated table.

Result.—No pressure indicated anywhere.

(e) I slid the pressure recorder here and there along the floor at the side of the weighing machine.

Result.—No pressure indicated anywhere.

(f) I placed the pressure recorder on the front of the medium's body just below her neck and slid it all over her arms and chest, covering every square inch of her body down to nearly the base of the trunk.

Result.—No pressure indicated anywhere.

The operators did not wish me to proceed with the pressure recorder any lower than near the base of the trunk, and as I invariably give heed to their demands, I desisted.

From the results of this experiment it seems that when the table is levitated by means of a true cantilever, all the reaction is upon the body of the medium, and there is none upon the weighing machine, drawing-board, chair, or floor. That is to say, the cantilever issues straight from the body of the medium and is not fixed to, or supported in any way by the drawing-board, machine, chair or floor.

EXPERIMENT 25: To see if the operators could increase the weight of the medium without acting on any material body in the room, i. e., if they were able to add to the medium's weight by action upon her body alone.

I carefully explained the matter to the operators and told them they must not levitate the table, or act on it in any way, or, in fact, exert pressure on anything. Their action was to be limited to the body of the medium.

Result.—Under these conditions the operators were unable to increase the medium's weight in the slightest degree.

CHAPTER III

MISCELLANEOUS

The question of electric conduction by psychic structure—Effect of medium touching the levitated table with her hands and with various articles such as glass and metal—Effect on phenomena of alteration of position of medium with respect to circle—Temperature measurements—Effect of screens in front of medium—Psychic body of medium.

EXPERIMENT 26: *To see if the end of the cantilever structure which presses on the under-surface of table and levitates it, is a conductor of low-tension electricity.*

About the centre of the under-surface of the table I screwed two pieces of brass AA (fig. 23), each about $1\frac{1}{4}$ in. by 4 in., parallel to each other and about $\frac{3}{4}$ in. apart.

An insulated wire was bared at the end and fixed to each, the wires being in an electric bell circuit. I placed the table upright on the floor and asked the operators to levitate it, and, while they were levitating it, to press upwards on,

and across the two pieces of brass AA. They said they would try to do this.

After some manœuvring the table levitated.

Result.—The bell did not ring.

The apparatus was tested prior to the experiment and found correct.

I asked the operators if they had placed the

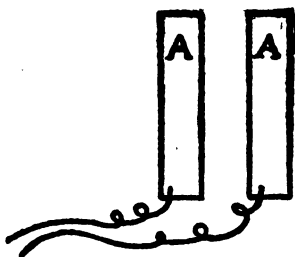


FIG. 23.

end of the cantilever across the pieces of brass, but they informed me they had *not*. They said they were unable to place it across and had levitated the table from the region of under-surface beyond the metal.

EXPERIMENT 27: *To see if the free end of the cantilever structure is a conductor of low-tension electricity.*

I turned the table (with apparatus fixed to it as in Experiment 26) upside down and asked the operators to place a rapping rod across the pieces of brass AA (fig. 23). They seemed to

accomplish this easily, for the rod could be heard scraping over the metal.

Asked if the end of the rod were properly across and touching both pieces of brass simultaneously, they answered in the affirmative.

Result.—Bell did *not* ring.

This result seems to show that the end of the rapping rod offers a somewhat high resistance to a low-tension electric current.

EXPERIMENT 28: *To see if the free end of the cantilever structure is a conductor of low-tension electricity.*

The operators having failed to ring the electric bell in the manner described in Experiment 27, I decided to substitute for the bell a galvanometer, an instrument which measures electric currents of very small magnitude. Fig. 24 shows the arrangement, where AA are the two pieces of brass described in Experiment 26 (fixed about $\frac{1}{2}$ inch apart—somewhat closer than in Experiment 26), G, the galvanometer, B, a dry cell, and WW insulated wires connecting the whole in series.

The operators were told to put the end of one of their psychic rods across both pieces of brass, or, if they could not do that, to pile some psychic matter across. If the end of the rod or the psychic matter were even a feeble conductor of

current electricity, the needle of the galvanometer would deflect.

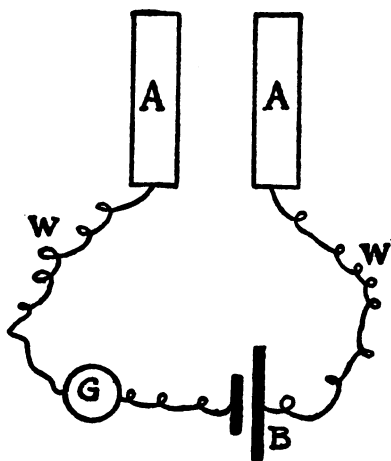


FIG. 24.

Result.—There was much scraping on the wood of the table in the neighbourhood of the brasses AA, and it was evident the operators were trying to do what was asked of them. They seemed, however, to experience much difficulty. By means of raps they said they had trouble in getting their psychic stuff across the pieces of brass AA. I gathered that the metal, whether because it was bright and polished, or simply because it was metal, or because it was electrified, repelled in some manner or other the psychic stuff. However, the operators said they

got across AA' simultaneously two or three times.

There was on no occasion any deflection of the needle of the galvanometer.

EXPERIMENT 29: *Effect of medium touching the levitated table with her hands.*

While the table was levitated in the usual way, one of the members of the circle thought the medium would like to feel its great resisting pressure. So she told the medium to take hold of the edge of the levitated table nearest her with her hands. The medium leaned over and did so. The effect was startling. No sooner did she touch it than the table dropped.

The table being again levitated, I seized it and noted its great resistance to my muscular pressure. Keeping my grip of the table I asked the medium to touch its edge. Within a second of her doing so the table dropped and every particle of resistance disappeared. Several times was the experiment tried and the result was always the same. Within two seconds at the most of the medium touching the edge of the table, all psychic resistance vanished. It did not disappear quite instantaneously, but took from a fraction of a second up to about two seconds.

What had happened? It appears that the medium by touching the wood of the table estab-

lished some kind of a psychic circuit. Perhaps the matter contained within the cantilever structure returned to her body *via* her hands and arms.

EXPERIMENT 30: *Effect of medium touching the levitated table.*

At a date later than the occasion of Experiment 29, I carried out further tests on the effect of the medium touching the levitated table not only with her hands but with articles such as wood and glass.

The operators were told to levitate the table in the usual way, but to bring it a little nearer the medium than was customary so that she could easily touch it. They were asked to keep the table levitated if they could, until told to drop it. Each test was carried out several times.

(A) The medium touched the near edge of levitated table with her bare hand.

Result.—Table always dropped—not quite instantaneously but taking from 2 to 3 seconds.

This result is in agreement with the result of Experiment 29.

(B) The medium leaned over and placed her bare hand on the surface of the levitated table near its centre.

Result.—Table dropped in from 2 to 3 seconds—exactly as in test A.

(C) The medium touched the surface of levitated table with a glass tube which she held in her hand.

Result.—The table dropped in from 5 to 6 seconds.

(D) The medium touched the surface of the levitated table with a piece of twisted paper which she held in her hand.

Result.—No effect. The table did not drop.

(E) The medium touched the surface of the levitated table with a piece of wood about a foot long which she held in her hand.

Result.—No effect. The table did not drop.

(F) The medium lifted one of her feet and gently slid it up and down a near leg of the levitated table.

Result.—No effect. The table did not drop.

Seeing that the table did not drop I got the medium to touch its surface with her hand (simultaneously with the contact of her foot on its leg), when the table dropped with a crash.

EXPERIMENT 31: *Effect of medium and others touching levitated table.*

At a date a fortnight later than the occasion of Experiment 30, I carried out further tests on the effect of the levitated table being touched.

(G) The medium touched the levitated table

with (1) an iron poker and (2) a piece of copper wire.

Result.—The table dropped in both cases in from 6 to 7 seconds.

(H) The medium put on a glove (kid lined with silk) and touched the levitated table with it.

Result.—The table dropped in about 8 seconds.

(I) The medium held her bare hand above the table as it rested on the floor and the table levitated until its surface came in contact with her hand.

Result.—The table very quickly dropped.

(J) I clasped the medium's right hand in my left and I touched the levitated table with my other hand.

Result.—The table slowly dropped, the levitating energy seeming to be gradually sucked from it.

(K) The medium clasped the left hand of Mrs. Morrison (who was sitting on the right of the medium). Mrs. Morrison touched the levitated table with her right hand.

Result.—No effect; the table remained up quite steadily.

(L) Mr. Goligher (who was sitting on the left of the medium) grasped her left hand and touched the levitated table with his free hand.

Result.—No effect; the table remained up quite steadily.

(M) A visitor who was in the room watching the experiments grasped the left hand of the medium and touched the levitated table with his free hand.

Result.—No effect; the table remained up quite steadily.

(N) All the sitters (except the medium) placed their hands simultaneously on the levitated table.

Result.—No effect.

Then the medium added her hand to the pile on the table.

Result.—The table dropped in a couple of seconds.

(O) The medium held her hand in the air near edge of the levitated table (but without touching it).

Result.—No effect.

(P) The medium held her hand in the space underneath the levitated table.

Result.—Table dropped.

EXPERIMENT 32: *To discover the effect on the phenomena when the medium sits on her chair with her back to the circle.*

The medium's chair was turned round through 180 degrees, so that she sat with her back to the circle.

Result.—Raps were given in front of her, i. e., in the direction in which she was facing, outside the circle, and under her chair. No phenomena, however, could be obtained within the circle—not even the least movement of the table.

EXPERIMENT 33: *To discover the effect on the phenomena when the medium sits on her chair at right angles to the circle of sitters.*

The medium's chair was turned through 90 degrees, so that the side of her body was presented to the centre of the circle.

Result.—The table was quite easily moved about the floor but was not levitated. The operators said they were able to use only one rod in this case, that one issuing from the medium's ankle nearer the table.

EXPERIMENT 34: *To see if it was possible to obtain levitations or movements of the table with the medium and all members of the circle standing.*

The medium and sitters stood up. I asked that the table be levitated or moved about.

No levitation was obtained, but the table was quite easily moved about the floor. Raps were also easily given.

EXPERIMENT 35: *The effect of lightly grasping an ankle of the medium.*

I put my hand lightly round the right ankle of the medium, at the same time asking questions of the operators. They answered with subdued, dull raps by means of a rod evidently taken—judging by the sound—from her free ankle. While the raps were occurring, the muscles of the ankle I was holding seemed to be squirming; it is not a very graceful word, but it is the only one which adequately describes the feeling. The foot was quite steady; it was only the muscles round ankle and lower part of calf which were trembling and vibrating sinusously.

EXPERIMENT 36: *To find if there is any alteration in the temperature of the table during a long levitation.*

A friend had suggested that the operators may possibly abstract heat energy from the table to aid them in producing phenomena. This was a point of view which had not occurred to me. Accordingly, I made a hole in the centre of the top of the table and fixed the bulb of a thermometer tightly in it. The stem was held in an upright position by an arrangement of cardboard. I told

the operators to levitate the table for as long as they conveniently could. The table immediately rose and remained in the air for more than 5 minutes.

RESULT:

Temperature just before the levitation..... = 24° C.

Temperature just after the levitation..... = 24° C.

The greatest care was taken to get this result accurate and I am certain that there was no change of temperature exceeding $\frac{1}{4}$ degree C. Hence it would seem that no, or very little, heat energy is abstracted from the table for the purpose of producing the phenomenon.

EXPERIMENT 37: *Temperature of the psychic cantilever and psychic stuff generally.*

The table being levitated, I held a Centigrade thermometer (of length about 6 inches) by the end and waved it about under the table. I slowly moved the thermometer across the space under the table, from legs to legs, at nearly all heights from floor to surface, covering practically all the space below table. This process occupied about 3 minutes, the table remaining quite easily in the air all the time. The crossing of all regions of space immediately below table did not affect the phenomenon in the least.

Result.—There was practically no alteration

in temperature from the temperature of the room. At the most there may have been a decrease of $\frac{1}{2}$ degree C. but I am not quite certain of it. At any rate the decrease was negligible, which seems strange, as the region under the levitated table often feels somewhat chill to the hand.

Note.—If there was a psychic column—or vertical part of the cantilever—below table, as is usually the case, then I must have cut through this many times with the thermometer tube during the experiment. I felt, however, no resistance whatever, and the levitation was not affected in the least. The reader should note that it seems quite possible to cut through the columnar part of the cantilever without affecting the phenomenon, but impossible to cut through that part of the structure between table and medium without causing table to drop.

I placed a Fahrenheit thermometer, which was clipped to a wooden frame, on the floor within the circle and told the operators to touch the bulb with a psychic rod, and to pile psychic stuff upon it if they could. They were very quickly moving the instrument about the floor and apparently doing what was asked.

Result.—No difference of temperature from the temperature of the room.

SCREENS IN FRONT OF THE MEDIUM

EXPERIMENT 38: *Wire netting in front of medium.*

A piece of wire netting having holes through it about one square inch area, height about $2\frac{1}{2}$ feet and some 3 feet long, was placed in front of the medium, between her and the table. The sitter on each side of the medium held an end of it and put his foot on the bottom of it so as to keep the lower part of it on the floor. The consequence was that the operators were not able to act on the table except through the netting.

I asked the operators either to levitate the table or to move it about.

Result.—The table did *not* levitate, and did *not* move (it did move a little on two occasions but it was doubtful if the wire net were not touching the table at one point at the time). The operators were given plenty of time and evidently made great efforts to do what was asked of them. But the result was failure. The wire netting itself was often nearly pulled out of the hands of those holding it as the cantilever arm evidently tried to get through.

EXPERIMENT 39: *Potato sack in front of medium.*

A fortnight after Experiment 38 was carried out I tried another kind of screen, viz., a cloth

one. To be exact, it was a ripped-open potato sack and was of very open texture. When held up to the light the interstices between the threads were sufficiently great to allow one to see through.

The sitters on each side of the medium (myself assisting) held this screen in their hands, keeping it between her and the table. The sitters also put their feet on the bottom of it to keep it on the floor. The operators were asked to levitate the table, or move it about (if they could) through the screen.

After a few minutes the screen was pushed violently outwards by the psychic rod pressing on it. So great was the force applied that the three of us who were holding it could only with the greatest difficulty keep it in position (on one occasion, indeed, it was pushed clean out of our hands). The location of the pressure was quite low down, near the floor.

Result.—After several futile trials the operators gave up the attempt, saying that they could not get the structure through the screen, a fact which was perfectly obvious to me. The end of the psychic rod would appear to be solid or “materialised,” and hence could not be pushed through the interstices of the cloth.

At first sight these negative results obtained with the wire netting and cloth screen may seem

strange. For does not the structure go through the clothing of the medium? It must do so if it issues from her body, and it seems to suffer no hindrance when so passing. Why, therefore, do quite porous screens when placed 6 inches in front of her prove altogether impenetrable to the psychic arm?

In order to find out something about this I wrapped the cloth screen (the potato sack) round the medium's body in the manner of an apron, tucking it round her tightly and putting it under her boots on the floor, so that, if the structure did issue it must go through the screen which was thus practically a part of her dress. The operators were asked to move the table about the floor and to levitate it.

Result.—The table was moved about the floor several times fairly easily, but could not be levitated. The phenomenon was evidently much more difficult when the medium was wrapped round with the sack than when she was free of it.

Other screens were tried of various kinds of cloth and cloth nets of several sizes of mesh. With the nets small movements of the table were sometimes obtained when such nets were placed upright before the medium a foot or so in front of her. I do not intend to go at length into this question here. Briefly, it may be shown that

(1) the free end of an ordinary sized psychic rod cannot penetrate ordinary closely woven cloth screens when such screens are placed more than inch or two in front of the medium.

(2) if, however, such screens be wrapped tightly round the body of the medium, and especially so round her feet and ankles, fairly strong psychic action can take place through them.

(3) the closer such screens are to the body of the medium the stronger the psychic action through them.

(4) some slight psychic action can occur through fairly open cloth network placed a foot or more distant from the medium.

The reason for all this, as I shall show in a later work, is, that the materialisation of the working or free end of the psychic rod occurs very close to the skin of the medium and even sometimes directly upon her skin. It is this materialised film of matter which, being formed at a maximum of an inch or two from her body, cannot pass through the screens; that is to say, the end of the psychic rod is a film of ordinary solid matter and this, of course, cannot pass through matter interposed in its path. The thinnest psychic rods (about the thickness of a lead pencil) can get through a comparatively small mesh (see (4) above).

EXPERIMENT 40: *To see if the operators could write a message with a pencil.*

A piece of brown paper was placed on the floor within the circle under the table, and two pencils (constructed by pieces of thick lead being inserted in wooden cylinders about 6 inches long and 1/2 inch diameter) were laid on top of the paper. The operators were soon moving the pencils about, raising them and dropping them on the floor, scraping with them and so on. When the brown paper was examined it was found to have a large number of pencil lines upon it, but no formed letters. The floor was similarly marked.

EXPERIMENT 41: *Attempt to weigh the psychic body of the medium.*

Many spiritualists and psychic investigators assert that man has two bodies, the physical one with which we are well acquainted and an im-material or ethereal one about which we know nothing. The latter is supposed to be the duplicate of the former as regards shape and even to be the frame upon which it is built up. It is also supposed to be the vehicle through which man functions after death.

The reader should note that the operators

themselves say that each of us possesses this psychic body in addition to the physical.

I once tried to weigh the psychic body of my medium. She was seated on a weighing machine and I asked the operators to exteriorise her psychic body, i. e., to remove it from her physical body beyond the limits of the weighing machine. I wished to see if there would be any decrease in the weight of the medium when this was done, i. e., if her psychic body was susceptible to the force of gravity.

On the operators giving three little raps on the floor as a sign to me that they had done what I asked, I found that the medium's weight had decreased by about 8 lb. but that the decrease did not remain constant at 8 lb. but became less and less until there was practically no diminution at all; and during the whole experiment the operators declared that the medium's psychic body remained exteriorised or placed beyond the limits of the weighing machine.

I thought at the time that the experiment was a failure and I am not now sure that there is much in it. It has, however, occurred to me as just possible that when the operators tried to remove the medium's psychic body they were unable to remove it *per se*, but had to take some physical matter along with it, i.e., some gross matter was mixed with the psychic body and

this was gradually returned to the medium's physical body, as was evidenced by the gradual return of her weight, leaving the psychic form more and more nearly pure.

CHAPTER IV

ANALYSIS OF RESULTS

THE experiments described complete what I may call my investigation into the mechanical aspects of the phenomena at the Goligher circle. Upon them I rely for definite information—as apart from mere hypothesis which hitherto has been the only attempt at solution—concerning such problems as the levitation of bodies *without physical contact*, the movement of bodies about the floor of the room, raps, knocks and so forth. I hope later on to show how these phenomena are only a special case of still simpler phenomena, i.e., those which occur *with contact* when the hands of the sitters, for instance, are upon the table and all sorts of violent movements occur not due, apparently, to muscular pressure. And I am going now to analyse the results obtained so that future investigators may have something to work upon, something which has at least the merit of experimental observation behind it and is therefore more than mere hypothesis.

Let us first consider the phenomenon of levitation. All the results obtained in the first series

of experiments were in agreement with the theory that a rigid beam or cantilever issues from some part of the medium's body. I have shown (see p. 34 seq.) that because the levitated body in those tests never weighed much more than 10 lb. while the medium was under experimental observation, that the moment of the weight of such body was insufficient to cause the medium to topple over in her chair. But we should expect that if the cantilever theory is a true explanation of the levitation process, that if the weight of the levitated body was gradually increased a moment would at length be reached which would have this effect. This was found to be so (see Experiments 1 and 2). Therefore, the cantilever theory received further corroboration. Accordingly, while not attempting to lay down an absolute law which may not need revision in the future, we may say provisionally that

- (1) The cantilever theory is correct as explaining one method of levitation.

The question then arises whether the cantilever method is the only one used during levitation. There were several ordinary observational phenomena (as apart from experimental ones) which seemed to show there was another method in use. For instance, I had often seen the table levitated a foot or more in the air and a strong man pressing down upon it with all his strength who was nevertheless quite unable to

depress it to the floor. Yet the medium in this case showed no signs of toppling over, although the applied moment, on the cantilever theory, must have been more than sufficient to cause her to do so. Was another method in use? Experiments 2, 3, and 4 show that there was. Instead of a cantilever a beam evidently projected itself from the medium's body to the floor under the table or to the floor between the medium and the table; from that point a more or less vertical projection rose to the table.

The net result was that most of the reaction was taken by the floor and not by the body of the medium, and hence there was practically no tendency to overturn on the medium's part. There was, in short, a psychic strut between the levitated table and the floor. The interesting Experiment 2 seems to show both processes in operation consecutively. Therefore, we may say (2) For levitated bodies of considerable weight a strut method is used.

This explains some of the points which seemed inconsistent in the first series of experiments.

The next questions that arise are: When is a cantilever used for levitation and when a strut? The answer is, that for comparatively light bodies a cantilever is almost invariably used and for heavy bodies or where the applied forces are great, a strut. The cantilever is a simpler piece of psychic mechanism than a strut. It is more

easily constructed. It does not require the expenditure of so much psychic energy. Therefore, it is used wherever possible. One has to remember that the psychic energy available in the séance room is strictly limited and that the more used up in any one phenomenon, the less the number of phenomena.

I have often watched the gradual petering out of phenomena at a circle owing to the lack of psychic energy, though often enough, on the other hand, phenomena are at their best towards the close of the séance time. In the latter case the original available energy was very great, the circle was harmonious and every one was in good health.

The operators themselves declare that for light bodies a cantilever is used and for heavy bodies a strut; which statements, as I have shown, are in agreement with experimental facts. Therefore,

- (3) The cantilever method of levitation is made use of for light bodies or where the applied forces are small, and the strut method for heavy bodies or when the applied forces are large.

In the first series of experiments there was considerable doubt as to what happened to the weight of the medium when the cantilever arm rested on the scalepan of a spring balance while the table was levitated above it. A very incom-

plete test of that series seemed to show that the weight of the medium actually increased. But a number of new experiments, very carefully carried out, showed that the weight of the medium really decreased regularly during this kind of levitation, and that, in fact, the reading on the spring balance minus the weight of the levitated table was, allowing for the experimental inaccuracies of the case, the actual amount of the decrease (see Experiments 6, 7, and 8). This is in agreement with the mechanics of a beam fixed to the medium's body and acted on by the given forces at its extremity.

The problem as to what happened to the weight of the medium when the weight of the table standing on the floor either upright or upside down was increased on demand, was not solved in the first series of tests. Experiments 10, 11, and 12, however, show pretty clearly that the medium's weight is reduced and that the amount of the reduction is equal, allowing for experimental inaccuracies, to the increased weight temporarily given the table. So the visitor to this, or any similar circle, may be pretty sure, when he finds that the séance table has become so heavy that he cannot lift it, or only lift it with difficulty; that the medium's weight is at the time correspondingly reduced. He is, in fact, trying to raise the medium when he attempts to lift the table under these conditions, though in

a manner which probably he never dreams of. The psychic arm projecting from the medium's body has hold of some part of the table with its free end (sometimes the under-surface and sometimes the legs of the table) and is pulling downwards, i.e., pressing it against the floor and thus apparently increasing its weight. The experimental results agree with the mechanics of the problem.

Several correspondents have written to me asking why the medium and the chair on which she was sitting were not bodily moved along the floor of the room or overturned, when a man pushed on the table as it stood on the floor, horizontally inwards towards the medium. If the cantilever theory is true and there was a rigid psychic bar connecting the table to the body of the medium, it was reasonable to suppose that for large forces applied to the table the medium and her chair would be forced along the floor. But at ordinary observational or demonstration séances this never occurred. At one séance three men pushed inwards on the table with all their strength—one even pushed backwards with his foot against the nearest wall to get a better leverage—but they were unable to make the table budge as it stood on the floor some feet from the medium. I decided to investigate the matter (see Experiments 13, 14, and 16). It is now

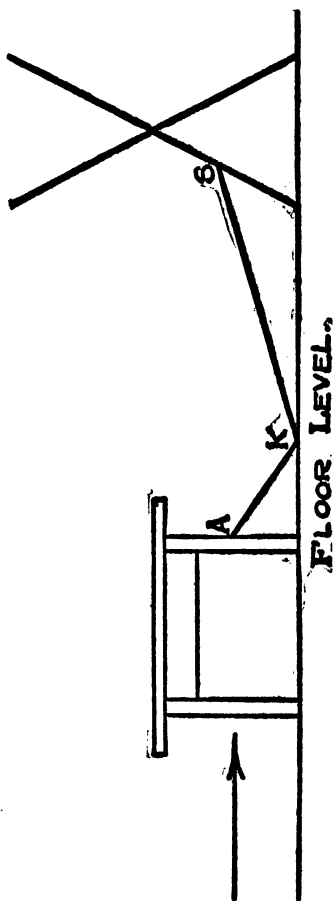
obvious that, as in the case of levitation, there are two methods in use:

- (4) A simple psychic arm connects the table to the medium—a bar which does not touch the floor—when the pressures applied to the table are light, or likely to be insufficient to move the medium's chair over the floor against friction.
- (5) An inclined psychic strut connects the table to the floor and thence to the body of the medium when the pressures applied to the table are likely to be heavy and sufficient to move the medium and her chair along the floor.

Fig. 25 shows such a strut. It grips the leg of the table at A, descends to the floor at K, and thence proceeds upwards into the medium's body. AK would seemingly in most cases be fairly short. At K the psychic structure actually grips the floor by a kind of suction effect. It does not merely rest upon it. The reader can therefore readily see what happens when muscular pressure is applied to the table in the direction of the arrow. The pressure is transmitted to the floor, and so long as the bar AK is stiff enough to withstand the compressive stress and bending moment and so long as the grip which K has on the floor does not relax, there will be practically no effect on the medium. This is what occurs when in a demonstration séance a man

is invited to push on the table as hard as he can. Occasionally the grip at K *gives* a little and in that case the medium and her chair are actually pushed back along the floor (see p. 64).

There is an important point about this type of psychic structure which I wish now to mention. If the arm AK (fig. 25) is fairly short, if it is sufficiently rigid, and if the grip of K on the floor is very firm, practically the whole of the reaction is taken by the floor. We have, in brief, a short rigid strut fixed to the floor at one end and to the table at the other. Hence it follows that the portion KS of the structure need



not be proportionately strong; in fact it might be absent altogether without affecting the magnitude of the phenomenon. That it is altogether absent, however, is not the case; for occasionally, as I have mentioned, the grip which the part K has on the floor relaxes and when this happens the medium and her chair move back bodily along the floor, for the structure AKS becomes then practically a simple unsupported rod between the table and the medium, and considerable mechanical pressure is transmitted to the medium. We have here then a glimpse of the methods used in phenomena of a more advanced type than those which occur at the Goligher circle. If the mechanical pressure and reactions can be thrown off the medium and transmitted instead to the floor, and if at the same time connection can be maintained with the medium, then it is obvious that psychic structures might be built up at a considerable distance from the medium—at a much greater distance than occurs with Miss Goligher. But in phenomena of the Goligher type, which depend for their spectacular value on force magnitude, these structures have of necessity to be exceedingly rigid and strong and hence much psychic energy is used per unit length, if I may put it that way; therefore, although such structures may sometimes not be simple projections from the body of the medium such as psychic arms issuing forth into

space and gripping the table without touching the floor, but may be built up mechanisms for transmitting mechanical pressures to the floor as shown in Fig. 25, yet such mechanisms, owing to the magnitude of the psychic energy and matter used in their construction and to the necessity of continually feeding them on a large scale, can only be constructed at a comparatively short distance from the medium. In order that phenomena should occur a long way from the medium the two following conditions must be fulfilled:

- (a) The phenomena must be such that direct mechanical reaction is not upon the medium.
- (b) There must be no very large force magnitudes involved.

Sometimes it would appear that phenomena involving considerable force magnitudes do occur at a considerable distance from the medium, but in those cases I think it will invariably be found that such phenomena last only for a very short period of time and that there are considerable empty intervals of time both before and after their occurrence; whereas at the Goligher circle phenomena of great magnitude often endure over considerable intervals of time.

The reaction falling directly upon the body of the medium means that the whole structure from the medium's body outwards must be of suffi-

cient strength to resist the largest direct and bending stresses imposed, and this would imply that much psychic matter has to be used. Therefore, in order to have phenomena at any distance from the medium involves the reaction being not borne by her, but by the floor of the séance room.

The reader will now understand the essential scientific difference between phenomena such as materialisation and those occurring at the Goligher circle. In the former we have a psychic structure concentrated in space, with mechanical reaction on the floor (due to weight of materialised body) and a long unstressed link probably connecting structure to medium; in the latter we have for the most part a psychic structure occupying a comparatively large space, with mechanical reaction naturally on medium but sometimes with special trouble placed on the floor, and if the reaction is on the floor, only a short unstressed link connecting structure to medium.

It will be seen on studying Experiment 18 in which the medium was under experimental observation while she and the chair on which she was sitting were bodily moved about the floor of the séance room, that the only likely theory which accounts for the facts is one in which an unstressed, or only feebly stressed, feeding or connecting link unites the actual pushing structure with the medium's body. The reaction is

in this case taken by the floor of the room and none of it apparently finds its way to the medium.

Likewise, in *some* of the cases of levitation of the table where there is a strut below the table and where the base of this strut grips the floor adhesively, we have, in all probability, a further case of an unstressed or feebly stressed link connecting the base of the strut with body of medium; not in all cases of levitation, remember, such as where a true cantilever arm was bent up at its end to reach the level of a spring balance (see R.P.P., ch. vii) but only in those cases where the base of strut is firmly fixed to the floor.

I wish to impress upon the reader this idea of an unstressed or slightly stressed link connecting the main portion of a psychic mechanism with the body of the medium. Many of my experiments decidedly suggest that it is present.

- (6) An unstressed or but feebly stressed psychic link often connects a psychic structure which is "out" in the séance room, to the body of the medium.

The question arises as to whether the structure itself possesses weight. I may say that this is a difficult matter to determine experimentally. One can never be sure when noting changes of weight on the part of the medium as she sits on the weighing machine and simultaneous readings

on another weighing machine placed on the floor within the circle space, whether the results are wholly due to mechanical forces exerted by the psychic structure or whether they are partly due to the weight of part of the structure itself. To illustrate this point we will consider the following example:

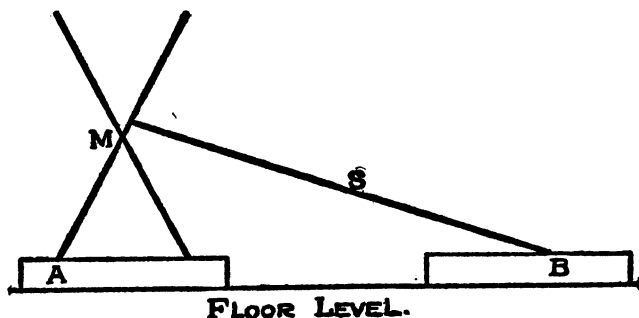


FIG. 26.

Fig. 26 shows diagrammatically the medium M seated on the weighing machine A. On the floor about three feet beyond her is another weighing machine B. The operators are told to press downwards steadily on B. We find that the increase of weight on B is practically equal to the decrease on A. The operators are presumably pressing downwards on B with some kind of a psychic structure S. We have now the two cases to consider,
 (a) that in which the structure S is weightless,
 and

(b) that in which the structure S possesses weight.

If (a) is in accordance with fact, the downward weight on B is due simply to mechanical pressure. If (b) is correct the downward weight on B is due to mechanical pressure plus pressure due to part of the weight of the structure S. In either case the experimental result is the same and the test affords no means of distinguishing whether the structure possesses weight or not.

Again, if I ask the operators simply to rest the end of the structure on B but not to exert any mechanical pressure, and I then find that there is a reading on B, I cannot be sure that this reading is solely due to the weight of part of the structure; for the operators may really be exerting mechanical pressure and I have no means of checking their statement that they are not doing so. On the other hand if I find there is no reading on B, I cannot be sure that the structure is weightless for I am unable to say if the structure is really resting on B at all.

The reader must remember that these structures are practically invisible even in quite good red light and that if the hand is put through one of them the only thing felt is a kind of disagreeable, cold, spore-like sensation, and the placing of the hand in its line generally breaks up the structure. The difficulty, therefore, of determining if the structure possesses weight by any

method in which psychic pressure is exerted is obvious. A method which might be used would be to determine an alteration in the position of the centre of gravity of the medium. Her centre of gravity would have first to be accurately found when no psychic structure projected and then again with the structure projecting. For the latter, the operators would have to be asked to project a psychic arm from the medium's body into the air in front of her, and to hold it in position there. I have found that they can do this. If the arm possessed weight the position of her centre of gravity would of course alter. Such an experiment would be very difficult to carry out satisfactorily.

I may say that the operators themselves declare that their structures possess weight. If we could be quite sure that the operators do exactly what is asked of them, for example, that they simply *rest* a structure on the scalepan of a weighing machine when required to do so, and exert no mechanical pressure whatever, then the solution of the problem would be easy. For always under these conditions it is found that the structure possesses weight.

If the reader will now turn to Experiments 19-23 he will find some data having to do with this question of the weight of the various psychic structures. The extraordinary results there obtained go to the very heart of the matter. It will

be noted that I asked the operators to do various things:

- (a) To place loosely on the floor psychic matter used for the building up of structures.
- (b) To build up a psychic rod of large dimensions and to rest the end of it on the floor.
- (c) To take as much matter from the medium's body as they possibly could and to rest it on the floor.

In each of the above cases a large decrease in weight of the medium was noted, amounting to about half her weight in Experiment 23.

What sort of matter is this that is seemingly removed from the medium's body, is used to build up psychic structures, and possesses weight? Here we have the great problem connected with psychic phenomena. Its solution will advance our knowledge of the subject enormously. Certainly this matter—if it be matter and a great number of experiments tend to show this is the case—is not in any form with which we are acquainted in a scientific sense. Although, of course, the number of experiments I have carried out is quite insufficient to enable me to lay down any absolute law (it will take many men in all probability many generations to do that) yet I think I am justified in mentioning some of the points which have struck me as important in connection with the case, and the one thing above all others that has astonished

me is that this matter seems to have practically no palpability. It is matter without palpability, but it seems to possess weight. The method by which it is expelled from the medium's body is a mystery. Only this is certain—that it is usually expelled in fluxes, not steadily, and that the difficulty in expelling it increases with the quantity expelled.

- (7) In order to build up the psychic structures and to produce phenomena matter seems to be driven out of the medium's body.
- (8) This matter seems to possess weight, sometimes as much as 50 lb.
- (9) It seems to be present in a form with which science is not acquainted.
- (10) Small amounts may be expelled steadily from the medium's body, but after a certain amount has been driven forth, the expulsion of the rest is evidently difficult and is accomplished in fluxes.

Now, one would think that if 50 lb. weight of matter was driven from the medium's body, the medium would visibly shrink in size. I did not notice any difference in Miss Goligher. But I have seen photographs of the Italian medium Zarrancini while he was bodily levitated, i.e., raised and at rest in the air, and in his case a curious translucency of his body is observable. He seems to be partly transparent, although his bulk or volume does not appear to be much altered.

Probably an invisible psychic structure is below him supporting him in the air, the material for which has been driven from his body in the manner such matter is driven from Miss Goligher. Thus the medium's body may not much alter in bulk but its density may substantially decrease during the occurrence of powerful telekinetic phenomena.

I am not going into a detailed account of the psychic structures at the Goligher circle in this volume. It is sufficient to say here that these structures are quite complicated mechanisms and by no means the simple things we might have expected.

It is now necessary to consider the fact that the medium never feels anything in the nature of mechanical pressure on any part of her body. Even in the case when she and the chair on which she was sitting toppled over during heavy levitation (see Experiments 1 and 2), she felt nothing. She told me that the feeling was exactly similar to what one gets when sitting on a seesaw. I wondered if a portion of the reaction, which was apparently on the medium, was not really upon some part of her chair, or on the drawing-board under her chair, or on the platform or rail of the weighing machine, for, if the reaction were upon any or all of these, the weighing machine would still include it. All one could say definitely was, that in a simple case of levita-

tion the whole reaction appeared to be upon the medium's body, although it might possibly be upon some part of the apparatus in her immediate neighbourhood which was resting on the platform of the weighing machine or upon the machine itself. Experiment 24 seems to show, however, that the whole of the reaction really falls somehow directly upon the body of the medium. How can it be that a rigid structure some two or three feet long can issue from the medium's body and support 30 or 40 lb. weight at its end and the medium experience no inconvenience? If a rigid bar of this nature entered some soft part of her body, say the region of the stomach, the flesh would be lacerated by such a leverage as that mentioned above. How then is it that the medium is never injured by these mechanical reactions and never even feels them? A possible explanation is as follows:

The psychic structure where it enters the body of the medium is composed of a kind of matter which is unknown. Let us call it X-matter. This X-matter can transmit *through itself* ordinary direct and shear stresses, but it cannot transmit such stresses from itself to ordinary matter. In order to accomplish this it has first to be converted into another form of matter which we may term Y-matter (really the kind of matter visible to the eye at a materialisation séance; in other words Y-matter is what is known to psy-

chic research students as "materialised" matter). We have then X-matter which can only be converted into Y-matter (in a manner analogous to water being converted into ice), and stresses transmitted through the former can be sent on through it to the latter. The Y-matter can act on physical objects in the séance room.

The rough outline of a psychic structure is then as follows:

- (a) Free end (which we will suppose is gripping the séance table) ; Y-matter.
- (b) Body of structure: X-matter. The structure as it enters the physical body of the medium is entirely composed of X-matter.
- (c) Within the body of the medium the X-matter composing the structure is again converted into Y-matter.

The sequence of mechanical action is as follows:

The Y-matter at the free end of, say, the psychic cantilever, grips the wood of the under-surface of the table which is then levitated. Weight of table is transmitted to this Y-matter and from the latter to the X-matter of the body of structure. The mechanical stress is transmitted along the X-matter right into the body of the medium. At the place where the structure enters the body of the medium, no stress of any kind is transmitted to her flesh, because, at this particular place we have X-matter and ordinary physical

matter in juxtaposition, and stress cannot be directly transmitted from the former to the latter. Within the interstices of the medium's body the X-matter of the psychic structure probably ramifies out and each ramification at its extremity becomes Y-matter and this Y-matter is attached to various interior portions of the medium's body, which thus finally, and indirectly takes the weight of the table.

For the same reason, also, practically no palpability is experienced when one cuts through the psychic structure with the hand, or with, say, a piece of wood. The X-matter of the body of the structure cannot directly transmit stresses to the hand or the wood. It requires first to be converted into its derivative, Y-matter, in order to be able to do so.

This very imperfect little sketch will give the reader some idea of the problems we have to attack when we deal with psychic phenomena of the physical order. That something analogous to the above actually occurs I have little doubt. Whether the X-matter is matter existing temporarily on a fourth-dimensional plane, or whether it is some form of matter with which we can one day deal I would not like to conjecture.

The operators themselves declare that the medium is somehow protected from the ordinary mechanical stresses to which she would naturally seem to be exposed. But they can tell us

nothing at all satisfactory as to how the protection is afforded.

Although I have no direct proof it would seem also that during the occurrence of phenomena, the body of the medium is less sensitive than it normally is to tactual impressions. The medium is never in trance, but from late observations I would hesitate to say that her state of consciousness is quite normal. Especially at the commencement of a séance she dislikes to be spoken to. But if there is any abnormality it is very slight, indeed, and would altogether escape the notice of any one who had not a prolonged acquaintance with her under ordinary and under séance conditions.

I turn now to a consideration of the strange results obtained when the medium touched the table with her hand, feet and with articles such as pieces of wood or glass (Experiments 29, 30, and 31).

The most startling fact that emerges from these tests is that the levitated table drops in from one to two seconds if the medium touches it with her bare hands. If she touches it with her gloved hands it takes longer to drop. If she touches it with a glass rod, or a bar of iron it still drops. If she touches it with a piece of twisted paper or a piece of wood it does not drop. When she touches it with her boot it does not drop. It does not drop when she holds her

hand in the air above it. When the members of the circle singly or altogether touch it it does not drop but immediately the medium adds her hand to the pile it drops.

What are we to make of all this? Why especially should the table invariably drop in from one to two seconds after the medium puts her bare hand upon it?

The most likely reason is that there is something in the table which is essential to levitation and which cannot remain in the table when the medium puts her hand on it but must flow along her hand and arm into her body. The experiments would indicate that the properties of this substance—I call it a substance, but of course, it may not be a substance in the ordinary sense—are as follows:

- (1) It must be of a very fine nature and invisible, for nothing of it can be seen on the table.
- (2) It has something to do with the medium, for when people other than the medium and not in physical contact with her body touch the levitated table it does not drop.
- (3) The medium's bare hand is most effective in conducting this substance from the table to her body.
- (4) Some substances conduct it more slowly than others, while some do not seem to conduct it at all.

- (5) The air does not conduct it.
- (6) From several persons experimented with, my body seemed the only one which conducted it and that only very slowly.
- (7) It is essential to the phenomenon of levitation.

The following remarks are only tentative and made on the chance that they may supply a hint or two which will be useful to investigators.

This mysterious "something" which appears to be in or on the levitated table is certainly not electricity. For one thing its rate of discharge is too slow and for another nothing that has ever occurred in the séance room has even suggested electric action. It is most likely a form of energy connected with very small particles of matter. Probably these particles are accumulated in and upon the wood of the table and their inherent energy used up by the operators as required. They are probably particles connected with the nervous system of the medium.

The psychic structure seems to issue, as a general thing, from the lower part of the legs of the medium. These energy particles seem to return via her hands. There may be a kind of psychic positive pressure in the legs and feet and a kind of psychic negative pressure in the arms and hands, so that there is a tendency for the particles to flow back to her body *via* the hands and arms if a conducting material or path is supplied

to them. To use an electrical analogy there is a higher psychic voltage in the neighbourhood of her ankles than of her hands.

The reader should clearly try to understand the two essential processes that occur in the séance room during the occurrence of physical phenomena of the telekinetic order. A vast deal of experimenting has shown me that these processes are as follows:

- (a) The projection by the operators into the séance room of psychic rods, arms or structures. These are only temporary productions and return to the body of the medium, whence they came, at the conclusion of the séance; or more exactly, they keep coming and going from the medium, as they are required, during the séance time. It seems most likely that they are composed, or at any rate partly composed, of matter borrowed from the medium's body, and the weight of this matter may, in an extreme case, amount to 40 or 50 lb. But at the conclusion of the phenomena the structure returns to the medium's body and of course all the matter with it. Hence this kind of matter which the medium supplies is only supplied temporarily and the medium at the conclusion of the séance loses nothing.

- (b) The supplying of some kind of energy which is used to enable the psychic structures to do their work, i.e., to levitate tables and so on. This energy seems also to be associated with matter, but not with 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 séance 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 to 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.

At the moment, then, we are probably dealing with process (b), when we consider the results of experiments in which the table drops when the medium touches it with her hand. Some of this energy-matter has most likely been lodged

in the wood of the table so that it may be available by the operators as required. The sitters have supplied it, but it has become associated in some way with the organism of the medium. It is what spiritualists loosely term "magnetism" and it seems to have a special predilection for articles made of wood; that is to say, when placed upon wood it does not tend to dissipate (see the experiment in which the medium touched the levitated table with a piece of wood without affecting the levitation).

I have carried out some experiments which would indicate that at all sittings for physical phenomena there is a permanent loss of weight amongst the members making up the circle. These tests seem to show that it is the sitters and not the medium who lose most weight. Some sitters lose more than others, some lose none, while the medium as a rule loses a small amount. In B.P.P., ch. viii, the results of one such test with the Goligher circle are given. The following are some further results of weighings just before and just after séances:

Results for an ordinary table séance where the sitters' hands were in contact with the table throughout. A drawing-board was placed upon the platform of a weighing machine and a chair upon the drawing-board. The board and chair together weighed $18\frac{3}{4}$ lb. and this is included in the weights given below—

	Weights just before séance—pounds	Weights just after séance—pounds
Mr. X. (medium).....	163 $\frac{3}{4}$	163 $\frac{1}{4}$
Miss A.....	125	124 $\frac{1}{2}$
Mrs. B.....	142 $\frac{1}{2}$	142
Mrs. C.....	165 $\frac{3}{4}$	164 $\frac{3}{4}$

The following are the results for the same sitters but for another contact séance:

	Weights just before séance—pounds	Weights just after séance—pounds
Mr. X (medium).....	164 $\frac{1}{2}$	164 $\frac{1}{8}$
Miss A.....	126	125 $\frac{1}{4}$
Mrs. B.....	141 $\frac{3}{4}$	141 $\frac{5}{8}$
Mrs. C.....	164 $\frac{1}{4}$	164 $\frac{1}{8}$

Further similar results will be found in a later chapter dealing with experiments on the "direct voice."

As a control experiment I weighed three friends. We then sat round a small table and indulged in a game of cards for an hour and a quarter. I then re-weighed them but could not find the least difference from the former weighings in any of them. Needless to say, in all the above cases proper precautions were taken that no material object was added to or subtracted from the person of any of the persons concerned between the time of the first and last weighings.

Such experiments as these seem to indicate that there is a small permanent loss of weight amongst the members composing the circle and that the sitters are more concerned in it than the

medium; and that this loss is quite apart and distinct from the temporary and often large losses that the medium experiences during the séance. I think that this permanent loss is connected with the psychic energy or "magnetism," supplied mostly by the sitters.

In one flashlight photograph which I have of Miss Goligher, taken during a séance, there are faint traces of a dark substance issuing from or proceeding into each of her fingers as her hands rest on her knees. These markings appear like faint prolongations of her fingers. They seem to go straight down the front of her skirt to the neighbourhood of her ankles.

It is also well known among people who make a practice of sitting for "contact" phenomena that at the commencement of the séance there appears to issue from the tips of the fingers a peculiar kind of gaseous substance, the ejecting of which can be quite plainly felt. The fingers usually become quite cold while this process is going on. It always occurs at the beginning of the séance and is in abeyance later on.

Again, too much sitting in circles has a bad effect on the health of many people. They seem to lose vital or nervous energy, the loss of which appears to require a considerable period of time to make good.

So that taking everything into consideration, I think there can be little doubt that upon or

in the levitated table there is accumulated a store of psychic energy; that this energy is connected with small particles of matter; that these particles have a tendency to return to the body of the medium, and that without them no phenomena are possible.

Experiments 26, 27, and 28 seem to show that the free end of the psychic structure does not conduct low-voltage electricity. But if the reader will turn to Experiments 80, 81, and 82 R.P.P., he will find that the structure discharges an electroscope. This would appear to show that the Y-matter at the extremity is a poor conductor, in a similar fashion to the skin of the human hand, to low-voltage electric currents, but that if it touches something which is at a high voltage it causes a discharge to earth, just, for example, as the hand would do.

The action of screens placed in front of the medium is just what we might expect from our knowledge that the free end of the structure is materialised, or practically ordinary matter. Unless the psychic rods are very small the materialised ends cannot be pushed through the interstices of the threads or wire. If the screens are *very* close to the medium's body, that is to say, practically in contact with her, an imperfect kind of materialisation of the ends may be effected beyond the screens and limited psychic action may occur.

CHAPTER V

QUESTIONS AND ANSWERS

I GIVE below a series of questions which have been addressed to me at various times. I am quite aware that the answers are very incomplete, but they are the best I can give at this stage of our knowledge of psychic processes and phenomena:

(1) Q. Does the application of force by the psychic structure present any analogy to the way in which force is transmitted by water through a tube?

A. In some examples of phenomena it does. For instance, in the case in which the table is turned upside down on the floor and is then apparently "glued" to the floor, the psychic apparatus may be likened to a tube projecting from the medium and filled with water. In the medium's end we can suppose there is a piston and also a piston at the other end, and that this second piston presses on the table. When a force is applied to the first piston, the pressure is transmitted through the water to the second and thence to the table.

Generally, it is possible to conceive of a psychic structure as a stiff tube filled with an incompressible fluid, the tube itself having the power to lengthen and shorten and to move up and down.

It is also possible to imagine that raps, blows, etc., could be transmitted through such an apparatus.

In the case in which the medium and the chair on which she is sitting are bodily pushed along the floor, the application of water pressure transmitted along tubes is comprehensible (see Experiment 18).

It is necessary to say, however, that the idea of fluid pressure transmitted along a rigid tube is no more than an analogy.

(2) Q. Does the psychic structure resist pulls as well as pushes?

A. Yes. It also resists torques. When the trumpet is psychically held up in the air, the experimenter may grasp the end of it and endeavour to turn it. He finds that he can turn it through a few degrees, but that the resistance to further twisting soon becomes so great that he is unable to proceed. The structure resists forces applied to its free end just as an ordinary solid body does. But the likeness of the structure to a solid body does not appear to go much further than this.

(3) Q. Is there any possibility that some, or

all, of the energy required for the manifestations is a form of heat energy ; i.e., is it possible that the operators can abstract supplementary energy from a table by slowing down its molecular movements?

A. It does not seem likely. During a long levitation I could not discover any fall of temperature in the table (see Experiment 36). There is much evidence that the energy required is taken only from the bodies of the sitters, such evidence including loss of weight, physical fatigue after a séance, nervous bodily reactions, etc.

(4) Q. In a good séance do phenomena go on continuously without periods of rest?

A. No. They are never continuous. After a burst of phenomena there is a period of quiescence as though time were required for the collection and storage of psychic energy. It would appear that at least some of this energy is stored on or within the wood of the table (see Experiments 29, 30, and 31).

(5) Q. What do you mean when you use the term "psychic equilibrium"?

A. I have used this term, in default of anything better, to mean that the preliminary stage of instability at a séance is over—the stage in which phenomena are as a rule weak, sporadic, and unreliable, and in which the operators would appear to be paying more attention to col-

lecting quantities of psychic energy from the bodies of the sitters than to producing really good phenomena—and that a kind of equilibrium has been established in which there is a reserve of energy to draw upon. The two stages are analogous, for instance, to that in which steam is being raised in a large boiler and that in which this process has been completed and the boiler is in steady working order.

(6) Q. What is the medium's condition during and after the séances? Does her respiration or pulse increase during levitation? Is she exhausted at the end? In fact does she supply the *energy* as well as the material?

A. Her general condition after a séance seems much the same as before it. She does not seem in the least fatigued, although, she tells me, she is inclined to sleep longer than usual the following morning. I have no data with regard to pulse or respiration. During the séance she supplies the material but not (or only a very little of) the energy. The function of the sitters is to supply the energy.

(7) Q. Have raps ever occurred while the medium has been asleep?

A. Yes. On several occasions, I have been informed by her sisters, rapping has taken place while she has been sound asleep. Most often she was not wakened thereby. The members of the circle had a verbal agreement with the op-

erators that the latter should not interfere with the medium at any time except during séances. This arrangement the operators loyally kept to with the exception of occasional rapping at night in her bedroom, which I think was done for some special reason.

(8) Q. What is your experience of clairvoyance in connection with the Goligher circle?

A. Very involved and on the whole unsatisfactory. In R.P.P. I gave one example of clairvoyance by a lady who is psychically developed and who seems really to have seen something of the actual physical processes involved. A gentleman, who has had a fairly good scientific training and who is also a psychic, has likewise given me an account which agrees to some extent with several processes of which he was ignorant. But on the whole the results have been disappointing, at any rate as far as descriptions of the actual psychic structures are concerned. As at all circles, some very wonderful and impossible things are alleged to have been seen by people who were under the delusion they possessed the clairvoyant faculty. Several persons declared that they beheld spirits actually holding up the table with their hands—a result which would simplify the problem of levitation considerably if only it were true.

With regard to what clairvoyants have seen of the operators themselves the same kind of

thing holds. I have heard clairvoyants describe in minute detail various spirit forms they said they saw in the room, and, while they were giving their descriptions, raps, loud and happy-sounding, were heard on the floor, apparently in confirmation of what the clairvoyants saw. On the other hand spirit forms have been seen which I am sure existed only in the imaginations of the "seers" themselves.

If the experimenter had to depend upon clairvoyance for information concerning the psychic processes at the Goligher circle he would be leaning on a broken reed. I have never received the slightest help from it during all the years I have been experimenting. In my experience clairvoyance is a faculty not much to be depended upon even in that region where we might expect it to be supreme, the psychic.

(9) Q. What is your opinion of the question of conscious or unconscious fraud at séances for physical phenomena?

A. While recognising that both varieties of fraud exist, I am confident that they have been much overrated. Even at séances, such as the Golighers', where everything is above suspicion, where all phenomena can be demonstrated with the greatest ease to be genuine to the last detail, things happen which to a superficial observer might appear fraudulent. For instance, sometimes the medium's body, or portions of her

body, make spasmodic kinds of movements when heavy raps or impacts are being experienced far out in the circle. These are simply the reactions due to the raps and are what we might expect. The seeker after fraud (who, by the way, is usually a person with no knowledge of science) immediately puts them down to imposture. My experiments, conducted over a long period of time and more thoroughly than any ever carried out hitherto, have proved to me beyond all question that the medium's body is either directly or indirectly the focus of all the mechanical actions which result in phenomena. And not only is it the focus but it also seems to supply a kind of duplicate of portions of her body, which can be temporarily detached and projected into the space in front of her. Thus things happen in the séance room which, from the very nature of the case, sometimes bear a superficial appearance of fraud, though, in a properly conducted circle it is only superficial, and the true and genuine nature of the phenomena can always be discovered by a little investigation. I am therefore chary of accepting off-hand any fraud hypothesis. Many of the cases of fraud which have been brought forward against mediums I know to be untrue, and further, I know (which the authors of the fraud theory do not) exactly where the truth lies and in what way a genuine manifestation has borne

the appearance of a fraudulent one. This occasional similarity of genuine and fictitious phenomena is very disconcerting to the investigator when he meets it for the first time and has, I venture to say, put a period to much promising work in the psychic field. But the man who is not ready to go thoroughly into details and hunt out the ultimate causes of things is of no use in the séance room.

(10) Q. Has there been much interest shown in your researches, especially by scientists?

A. Yes. I have had letters from people in all walks of life who wished some point made clearer in connection with the phenomena. I have had many valuable suggestions with regard to experimental work from scientific men in many parts of the world. And I am altogether agreeably surprised at the great interest taken generally in the subject. To judge from the scathing articles which occasionally appear in the press, an outsider might be justified in concluding that psychic phenomena and psychic subjects in general are mere humbug, and that those who deal with them are also humbugs, though perhaps self-deluded ones. The superior attitude of most of the press is highly amusing. It is based, I think, on the assumption that the general public know nothing of psychic things, whereas the truth is that nowadays eight people out of ten know something of them. I should

say, judging from my experience, that the newspaper which takes upon itself the responsibility of declaring everything connected with psychic research to be humbug, and which even conducts a campaign against it, will surely offend a host of its readers. People do not go about advertising their belief that a spiritual world actually exists—a world whose existence can to some extent be demonstrated by experiment—but nevertheless there are very many people in the world to-day with this belief and their number is steadily growing.

The kind of work which I have carried out and, in fact, am still continuing, has for its object the placing of as many of the processes as possible connected with psychic phenomena before the educated world, so that others may be encouraged to follow, whereby in time such an accumulation of scientific testimony and facts may be gathered that no thoughtful man may any longer doubt. I desire to help in the discovery of the psychic laws, which are as real as physical ones, so that in the years to come there may be no more mystery. If there is no mystery there will be no mystery mongers.

(11) Q. Is ordinary scientific experience of much avail when conducting experiments in the séance room?

A. In conducting experiments in an ordinary mechanics laboratory we work with certain in-

struments or machines which can be relied upon to do what they are asked to do; in other words, if we make proper dispositions we can obtain a certain amount of accurate results for a given amount of mental and physical work. We apply, for instance, a force of a certain number of pounds to a certain part of a given machine and we can always rely upon a certain effect due to this force. In psychic work it does not follow that a given cause produces always the same effect. In ordinary scientific work our tools are obedient to our commands. Unknown factors can be almost eliminated. In psychic work our tools are often anything but obedient to our commands and the unknown factors are predominant.

The truth is that the human factor in psychic work is the most troublesome and unreliable. No physical phenomena can be produced without the aid of a human being (usually termed a medium) and in addition several other human beings (called sitters) are often required.

If the experimenter can overcome the great stumbling block of the human factor, he will make progress and will find a use for his scientific knowledge. But until he learns, possibly only by long experience, how to control the human element necessarily concerned in his experiments, he will not make much headway. I

was lucky in having a medium like Miss Goligher to work with.

(12) Q. In the two years that have passed since the publication of "The Reality of Psychic Phenomena," have you changed your opinion in regard to the identity of the "operators"?

A. No. I am quite satisfied in my own mind that the operators are discarnate human beings. Of course I am not primarily interested in this phase of the matter. The methods by which the phenomena are produced are what I am chiefly concerned with, and whether the operators are what they claim to be or are masquerading sub-conscious elements of the medium's brain does not much matter to me. It is sufficient for my purpose that there are intelligences of some kind in charge of the phenomena. Nevertheless I have seen and heard sufficient at the Goligher and other circles to convince me that man does not really die at physical death but passes on to another state of existence, and that, for the most part, the entities who demonstrate at good séances are really human beings who have so passed on.

(13) Q. What is the best form of phenomena considered solely from the point of view of obtaining messages from inhabitants of the psychic realm?

A. In my opinion, the "direct voice." At a direct voice séance people who have "died" speak

audibly in an objective voice. Many readers will probably not believe this, but nevertheless, however incredible it may seem, it is a fact. Unfortunately a good direct voice medium is an extremely rare personage. I think there are not above half a dozen in Great Britain to-day.

(14) Q. Is the "direct voice" more satisfactory than materialisation?

A. Yes, from the point of view of obtaining messages. Materialisation phenomena require such a large expenditure of psychic energy that the quantity of this kind of phenomena is strictly limited at any given séance even with the best mediums. In the case of the "direct voice," however, the amount of psychic energy required seems to be very much smaller, with the consequence that a corresponding increase in the magnitude of results is obtained.

(15) Q. Is it dangerous for people who are not in good health to sit in séances?

A. Yes. The sitters supply most of the energy required for the manifestations and this energy is taken in some unknown form from their bodies. If a person is in poor health the drain of vital energy may be disastrous.

(16) Q. Has the holding of so many séances in any way affected the health of Miss Goligher?

A. No. But great care was taken to see that

she did not sit too often—never, except in very special cases, more than once a week.

(17) Q. What do you think of the future in store for psychic research?

A. I think it will have a great future. All indications point that way. But there will have to be organised effort and not merely the sporadic experiments of a few. The recent war, as one of its few welcome by-products, seems to have opened the eyes of a great many people to the importance of the subject, and the interest thus created is not likely to lapse. For, in the last analysis, psychic research and psychic research only is likely to determine in any definite way whether man does or does not continue to exist after physical death.

(18) Q. Have you found phenomena of the physical order so rare as most people think they are?

A. No. Of course, mediumship such as Miss Goligher's is rare. But I know several other persons who can obtain movements without contact, and I am confident that if I had the time to give to them and they had the time to sit regularly, good non-contact phenomena would eventually be obtained in their cases. As it is, I have obtained some data from experiments I have carried out with them.

(19) Q. How would you recommend an ex-

perimenter desirous of undertaking psychic research to proceed?

A. I think it would be well he should confine his attention to one small branch of the subject. The subject is already so vast that no man can tackle it all. Time should not be wasted in eternally seeking to *verify the actuality* of the phenomena. When the experimenter has satisfied himself that the phenomena with which he is dealing are genuine he should not seek to satisfy all the world, for that is impossible. He should go ahead and try to discover the mechanism of the phenomena and the laws regulating them. Psychic phenomena are quite as real as any other and the man who nowadays denies their occurrence on *a priori* grounds is not worth wasting time upon.

(20) Q. Should not the fact that light affects the magnitude of physical phenomena give us some clue to the composition of the psychic structures?

A. Yes, but it is difficult to say how. I once experienced the effect of light on these structures at the Goligher circle in a rather impressive way. The body and chair of one of the sitters was casting a shadow on a portion of the floor within the circle space. A rapping rod was "out" and was rapping on various parts of the floor. At my request it rapped on a portion of the floor where the light was strong and the en-

suing sounds were muffled and dull. It then rapped a few inches further along the floor within the shadow of the chair and the resulting sounds were hard and strong. It rapped half a dozen times in the light and in the shadow alternately and the result was always as stated. It changed quickly from the light to the shadow and just as quickly the loudness of the blows changed. As a matter of fact, the operators were actually giving me a simple demonstration on the effects of light upon their structures.

The effect of light in the séance room is immediate. I think the peculiar form of matter of which the structures are partly composed is quickly and adversely affected. Light of long wave length like red light is least troublesome, which points to the fact that the matter of the psychic structures must exist in a delicate and unstable form.

At the Goligher circle we once substituted mauve glass for the customary red glass of the illuminating lantern. We waited for quite a long time for phenomena. Eventually the séance table jerked about the floor two or three times. But that was all that occurred. The only light we could use with the certainty of getting good phenomena was the red.

It is possible that light of some particular wave length in the visible spectrum may not be injurious to phenomena. All that can be said at

present is that the longest wave length seems best and indeed the only possible. Nevertheless, there may be some wave length well up the spectrum which, when used alone, and not in combination with other wave lengths on either side of it, may be permissible. But this is a matter for exact and painstaking experiment. I need not enlarge on the advantages that would accrue if a type of radiation could be found which would strongly illuminate the séance room and at the same time not be hurtful to phenomena. Only the most powerful mediums have been able to produce strong physical phenomena in daylight and even then the period of such phenomena was of the briefest. Materialisation of the full form has, I understand, only been accomplished in daylight on one or two occasions and then only after prolonged sitting under the most suitable conditions with a strong medium of this class.

(21) Q. Is photography likely to play an important part in psychic research of the future?

A. I am inclined to think so. Indeed, I think that we may look for the chief advance along this line. There seems to be no doubt that by the aid of a certain peculiar type of mediumship, psychic "extras" can be made to appear on the ordinary photographic plate—these "extras" being in many cases pictures of deceased relatives or friends of the sitters. Unfortunately, this

class of result is very susceptible to fraud. All sorts of faked effects can be produced on an ordinary photographic plate and the amateur has little chance of discriminating between the true and the false. Nevertheless, there is evidence to show that genuine psychic "extras" are obtained when the proper quality of mediumship is present. The most convincing results are seldom made public. The facts of many cases have, however, been placed before me in confidence and I can only come to the conclusion, after thorough examination, that the "extras" are indeed photographs of deceased people—pictures impressed on the plate by means we know nothing about at present. Our ignorance of the method is of little relative importance. The levitation of a table was as mysterious to me as the production of photographic "extras" before I took up the investigation. What is required is continued investigation with the object of unravelling the laws—experiment and more experiment. Things are incredible only when we cannot understand how they are done. It is one of my objects in publishing the results of my researches into psychic phenomena to induce others to take a scientific interest in these subjects.

There is a kind of psychic photography besides that in which "extras" are obtained on the plate. I mean that in which flashlight exposures are

made of processes in connection with physical phenomena, such as levitation or materialisation. These photographs have of necessity to be taken by flashlight because the phenomena of this class cannot be obtained in any but dim light. The photograph of the levitating structure described in R.P.P., Experiment 87, was of this kind.

The effect on the medium of the flashlight is always severe. After the flash by means of which we succeeded in obtaining the above picture, Miss Goligher trembled violently for ten minutes or more. Her arms and legs kept jerking spasmodically and her body every now and then moved involuntarily. But in a quarter of an hour she was quite normal again. It is not to be wondered at that the effect of flashlight is severe on a physical medium when a psychic structure emanating from her body is "out" in the séance room. The reader who has carefully followed my experimental work will understand that the structure is built up of matter from the medium's body and that it is really a part of her organism in a very unstable state. It is acutely sensitive to practically all light, except that at the bottom end of the spectrum, and in fact, cannot exist in any light except this. Imagine then the devastating effect of the magnesium flash upon this delicate structure. No wonder the

medium trembles violently and is upset for some little time!

A few mediums of the past have apparently been able to withstand the effects of the magnesium light fairly well. At least no untoward results were reported. But I am satisfied that its use is rather risky for the medium and that it should only be employed after careful thought and preparation and in conjunction with the desires of the operators. For, whether the reader looks upon the operators as the spirit beings they claim to be, or as sub-conscious nuclei belonging to the medium or sitters, it is certain they are in charge of and produce the phenomena, and that, therefore, they may be trusted to know more about the dangers incurred by the medium than the experimenter. Miss Goligher is a young woman and possibly her bodily functions are not yet fully developed, with the consequence that exposure to flashlight during the occurrence of phenomena would be specially injurious to her. At any rate the operators were always careful that nothing should be done which would in any way be likely to harm her. They seemed anxious that photographs of the levitated table and of other psychic phenomena should be secured and we held several sittings for the purpose. But they always demanded that a trial of the flashlight should first be made with the object, apparently, of discovering its

likely effect on the psychic structures and the medium. Usually after that they simply refused to levitate the table again. They spelled out messages to the effect that if, while the table was levitated, the magnesium flash was used, the medium would probably be severely injured. It requires a large and powerful psychic structure to levitate a table, with corresponding drain upon the medium. The structure shown in the photograph (R.P.P., Experiment 87) did not require nearly so much psychic energy and material from the medium's body, as the table was not levitated at the time. It was only a framework compared with the structure necessary during actual levitation. Yet the medium was severely affected by the flash. If a heavily energised structure had been present, it is reasonable to suppose that the medium would have been proportionately affected and that really serious injury might have followed. The experimenter into psychic phenomena of the physical order should always be careful of the health and well-being of his medium. He should remember that he is dealing with processes of the true nature of which he is completely ignorant and that any thoughtlessness on his part is likely to lead to unfortunate results. Moreover, much better experimental work can be done if the medium is treated considerately than if she is looked upon as an insensitive machine. I think that much of

the trouble in the past has arisen from want of consideration for their mediums on the part of experimenters. Psychic work should be a combined affair; the experimenter and the medium should form a partnership, as it were, with the object of obtaining the best results possible.

There is no doubt that the operators at the Goligher circle were desirous that as much photographic work should be done as was consistent with the health of the medium. But unfortunately, it was found that little such work could be accomplished owing to the reasons mentioned. The youth of the medium was, I think, the chief drawback. Five or six years hence it will probably be found that she will not be so acutely sensitive to the magnesium flash as she now is and accordingly photographs of many phases of the phenomena, at present impossible, will be obtained. For my part I state plainly that in matters of this kind I would not go against the advice of the operating entities. I have had such intimate experience of the séance room and its manifestations that I have become systematically careful of the well-being of the medium.

While on the subject of the health of the medium I may mention that when the experiments were being carried out in which she temporarily lost 30, 40, and even 50 lb. in weight (see Experiments 19-23), there was abundant evidence that the strain upon her system was becoming

severe. I felt that it was necessary to be careful and I would not proceed too far. The operators, however, were working in conjunction with me on that occasion and, accordingly, I felt the more confident.

(22) Q. Is it the case, so far as your experience goes, that mediums are hysterical or weak-minded?

A. It is difficult to answer this by a direct affirmative or negative. Miss Goligher is an extremely practical and strong-minded young woman. She is not excitable but is placid and cheerful. As I have already mentioned, however, her mediumship has never been pressed. What might happen if she were to sit three or four times a week in promiscuous circles, I would not like to say; but I think there can be little doubt that she would suffer.

Some professional mediums are, I think, not exactly stable. A good many of them are excitable and given to exaggeration. A few are decidedly eccentric. I have never met one whom I would consider weak-minded, but I think, on the whole, their calling is not very suitable for them, either physically or mentally.

(23) Q. Have you had experience of mental phenomena such as trance, clairvoyance, etc.?

A. Yes. I have had considerable experience. Such phenomena do not, however, appeal to me so strongly as the physical. I expect it is a mat-

ter of temperament and that I am unduly prejudiced. I can never get rid of the feeling in the case of phenomena such as trance speaking, clairvoyance, clairauidience, automatic writing, planchette and Ouija board, etc., that the mind of the medium has far too much to do with the results. It is difficult to see how the mind of the medium can lift a table weighing 50 lb. clear of the floor when it is placed a couple of feet in front of her, but it is not at all difficult to picture how her mind, in its sub-conscious aspect, may be responsible for the general inanities of trance speaking, or what passes nine times out of ten for clairvoyance. The reader should understand that I do not decry the genuine nature of mental phenomena but that I am appalled at the difficulties of sifting them. There seems so little one can come to grips with. Of course phenomena of the mental class are much more common than those of the physical and that may account for our hearing so much about them. For one physical medium such as Miss Goligher there are a thousand so-called clairvoyants. I am not at all inclined to the opinion that it is by means of the mental phenomena that all doubt of the existence of a psychic realm will eventually be removed. I think, rather, that this will be accomplished largely by the "direct voice" and psychic photography, which are both phases of physical phenomena.

Some people have grown accustomed to look upon physical phenomena with contempt, but I think their attitude is a mistaken one.

(24) Q. Have the phenomena occurring with Miss Goligher shown any signs of changing in character?

A. No. In essentials they are the same now as they were four years ago. Of course they are of greater magnitude, variety, and accuracy, but their type has not altered. We had hoped to obtain materialisations or the direct voice and a cabinet was erected for that purpose in the séance room. But nothing came of it. I am inclined to think that each medium possesses his or her own particular type of phenomena, and that it is seldom capable of varying or embracing other types, at least to any notable extent.

CHAPTER VI

CONTACT PHENOMENA

I AM now going to describe some experiments I have carried out with "contact" phenomena, i.e., those in which the hands of the sitters are in contact with the table throughout the séance. Hitherto, as the reader is aware, I have dealt only with phenomena in which there was no contact whatever between the table and the medium or sitters.

Contact phenomena are quite common. Nearly every family contains one member at least who is capable of producing them. Some people, it is true, can produce them more quickly and more violently than others. All that is necessary is that a few persons sit round a wooden table and place their hands lightly upon its surface. If the requisite mediumship be present (and the mediumship required is of quite a low order) the table will sooner or later shake, move about, tilt up and down, and make various other motions not apparently due to muscular pressure exerted by the sitters. Many thousands of people have had experience of phenomena of this kind.

These table movements with hands in contact may conceivably be produced in three ways:

- (1) The table may be consciously moved by muscular pressure from the sitters.
- (2) The table may be unconsciously moved by muscular pressure from the sitters.
- (3) The table may be moved without the aid of muscular action at all.

The first tests I carried out were to see if (3) above was true, i.e., to see if sometimes the movements of the table with hands in contact were really *not* due to the action of muscular force exerted through the fingers upon the surface of the table. The person who is interested in spiritualistic phenomena will recognise at once that this is an extremely important matter. For if it can be shown that such table movements can be obtained without the direct aid of muscular action, then the messages received *via* the table must be delivered by something other than the simple process of mind acting on muscle and muscle on table. In short, there must be some unusual process going on, which at any rate is worthy of investigation.

The following tests were not carried out with the Goligher circle but with a few other friends, one of whom happened to be a very strong medium of the "contact" order. They were carried out in my own house in a small laboratory I have

fitted up for the purpose of psychic investigation.

EXPERIMENT. *To see if movements of the table could be obtained not due to muscular pressure, and to make other observations on "contact" phenomena.*

The apparatus employed will be understood from an inspection of Figs. 27 and 28, which are from photographs of the table in position.

Four flat rectangular pieces of wood are hinged to another rectangular shaped piece of wood screwed to the centre of the table. The four sitters place their fingers upon the hinged pieces under each of which is a pair of metal contacts in an electric bell circuit. Each pair of contacts is normally kept slightly separate by a piece of spiral spring fixed to the table. A chalk line is drawn across each hinged piece of wood three-quarters the distance from the outside. The hands of the sitters are kept beyond the chalk lines. The pressure on each piece of wood required to make the electric bell ring can be nicely adjusted from an ounce to a pound or so. From each corner of the table a cord proceeds to a circular spring balance reading to 50 lb., the latter being tied to an overhead beam. The cords are normally adjusted so that the table clears the floor by six inches or so.



FIG. 27



FIG. 28

The weight of the table with apparatus was $13\frac{1}{2}$ lb., as indicated by the spring balance.

The electrical apparatus was so adjusted that it was impossible for any one of the 4 hinged wooden leaves to be pressed downwards with a greater pressure than $\frac{1}{2}$ lb. without causing the bell to ring. The maximum pressure that could be put upon the table without the bell ringing was therefore 2 lb. Even if the leaves were pressed down considerably within the chalk lines with a force of $\frac{1}{2}$ lb. the bell would still ring, but the sitters always had their fingers well outside these lines.

SÉANCE I

Sitters: Mr. X (medium), Miss A, Mrs. B, Mrs. C.

The table was first placed upon the floor (the suspending cords being disconnected).

In about ten minutes after the opening of the séance, the table began to shuffle about the floor and in a little time lifted twice at Mrs. B's end. (Mr. X sat opposite Mrs. B). The bell did not ring.

In about half an hour the movements became powerful. I then hung up the table from the overhead beam.

I asked the operators to increase the table's weight.

Fully half a dozen times the pointer on the

spring balance went round to 26 lb. *without the bell ringing*. The table's weight being $13\frac{1}{2}$ lb. and the maximum downward force it was possible to put on the table under the conditions mentioned being 2 lb., we have the table's weight increased at least by $26 - 15\frac{1}{2} = 10\frac{1}{2}$ lb. by means not due to normal muscular pressure.

Later on the pointer on the spring balance moved slowly round to 32 lb. and then twice to 34 lb., and finally near the end of the sitting to 41 lb. This last was equivalent to a downward force applied to the table of $41 - 15\frac{1}{2} = 25\frac{1}{2}$ lb.

The increased weight was not put upon the table unexpectedly or haphazardly but only at such times as I made the definite request to the operators. Furthermore the increase of weight was a gradual process, occupying from three to five seconds before the maximum value was attained. Sometimes the operators were not successful in reaching the value hoped for, and on these occasions the weight was removed from the table and other efforts made, as was evidenced by the pointer again moving gradually round the dial of the spring balance. The fingers of the sitters were only lightly touching the hinged leaves at the proper place and many control tests showed that it was quite impossible to press down in the ordinary way with a total

force exceeding a couple of pounds without causing the bell to ring.

It is noteworthy that, as in non-contact phenomena, the most powerful results were often obtained towards the close of the séance.

As a further test the operators were asked to *remove* some weight from the table. On the request being made, the pointer on the balance began to move backwards towards the zero mark. Several times the table was lightened by about 7 lb. and on one occasion the pointer on the balance went right back to zero, showing that the whole of the table's weight had been removed. With the fingers of the experimenters on the apparatus as described, it is unnecessary to say that it was quite impossible to accomplish this feat by either conscious or unconscious pressure from the hands or fingers.

The above tests show, as was sufficiently evident already to those familiar with this class of phenomena, that the movements of the table when there is true psychic action upon it are not due to muscular pressure (at any rate in the ordinary sense) and that their cause must be looked for elsewhere.

Further incidents.—During the time the table was standing upon the floor and before it was suspended from the ceiling, I stood over it and raised it a little. At this time it was under strong psychic action, and I was surprised to find

that what appeared to be more or less rigid bars were connecting it low down on the legs to the medium. The kind of rigidity was exactly the same to the sense of feeling as the rigidity experienced at the Goligher circle with non-contact phenomena. Especially did the table resist being turned in a horizontal plane, or of being pulled or pushed horizontally. But if I pulled or pushed too hard the psychic link (whatever its nature) gave way and I had to wait for some minutes before it could be established again. Many times at this and subsequent sésances did I, with my muscular sense, try to locate these psychic connecting links, and to my surprise, I always distinctly felt them present when the psychic action was at all strong. With my years of experience at the Goligher circle I could make no mistake. The type of connecting link, in its main characteristics, was the same both for contact and for non-contact phenomena. At a contact circle held with entirely different sitters and in a town over 50 miles from Belfast I subsequently found that these psychic bars were also present and that they seemed to extend from the leg of the table low down, to the ankle of the medium, who, in this case, said that he felt during the whole sésance a cold sensation on the skin near one of his ankles, this peculiar feeling extending over a space about the size of half-a-crown. He said the spot on his skin felt just as

though it had been rubbed with menthol. The sensation went away as soon as the sitting was over.

It therefore seems that "contact" and "non-contact" table phenomena are not so dissimilar in their main processes as might be supposed.

The operators evidently found it easier to increase the table's weight than to decrease it; they seemed able to accomplish the former as often as I wished once the séance was well under way, but they were not always successful with the latter and appeared only to succeed after considerable trouble.

Sometimes when the pointer on the balance had successfully moved round to 30 lb. or so without the bell ringing it remained there for some seconds, and then as it gradually returned to its normal position of $13\frac{1}{2}$ lb. or thereabouts, the bell gave a ring when it was about half way back. This often happened. The bell did not ring when the downward pressure was being applied, but strange to say, sometimes gave short sharp rings while the pressure was being removed.

Sometimes while we were not doing anything in particular, the bell started ringing—long continuous rings and also short sharp ones. All the sitters declared they were not ringing it. I asked the operators if they were responsible, when immediately it was rung long and repeatedly as

though in affirmation. Also, the usual code was employed, three rings for "Yes," one for "No," and two for "Doubtful." Of course there was no direct evidence that the operators were really ringing the bell, as they said they were, because a very slight push from the finger of any of the sitters would suffice to do this. The sitters, however, declared most emphatically they were not consciously doing it.

SÉANCE II

Sitters: Mr. X (medium), Miss A, Mrs. C, Mr. F.

As in Séance I, the table with its electrical contact apparatus was suspended from a spring balance tied to a beam in the ceiling. The sitters sat round it and rested their fingers on the hinged leaves outside the chalk lines. A total downward force exceeding 2 lb. was sufficient to cause electrical contact and thus to ring the bell.

The operators many times increased the weight of the table without causing the bell to ring. The maximum pull down was 34 lb. (as registered on the spring balance) which is equivalent to $18\frac{1}{2}$ lb. extra weight, exclusive of weight of table. The operators tried many times before the 34 lb. mark was reached. The average additional weight put upon the table during the vari-

ous attempts was about 12 or 13 lb. The absence of Mrs. B seemed to affect the magnitude of phenomena at this sitting.

I placed the platform weighing machine beside the table, put a drawing-board upon it and a chair upon the board. Mr. X then sat upon the chair and along with the other sitters placed his fingers lightly on the contact apparatus.

Weight of Mr. X + chair + board = 163 lb.

I moved the rider along the lever of the weighing machine so that the lever would balance at a total weight of $155\frac{1}{2}$ lb.

I asked the operators to increase the weight of the table in the usual way.

I watched the circular spring balance above the table and I found that when it nearly registered 26 lb. (bell not ringing), the lever of the weighing machine, which was previously hard up against the top stop, fell to the bottom stop. The weight of the table had been increased by (at least) $26 - 15\frac{1}{2} = 10\frac{1}{2}$ lb.

Mr. X's weight had been reduced by

$163 \text{ lb.} - 155\frac{1}{2} \text{ lb.} = 7\frac{1}{2} \text{ lb.}$

Other similar experiments showed conclusively that each time the table's weight was psychically increased, the medium's weight was reduced, but there did not seem to be any fixed relation between increase of table's weight and reduction in Mr. X's weight.

Non-contact movements.—I had known all the

time that Mr. X was the chief medium but I was also under the impression that Mrs. B supplied some of the mediumship. That Mr. X was the chief medium was however conclusively proved at this séance. For non-contact movements occurred due to him. Towards the conclusion of the séance he held the fingers of one hand about two inches above his hinged leaf and on request the operators rang the bell easily and often. The electric flash between the contacts under Mr. X's hinged leaf, as the bell was rung, established the fact that the phenomenon was due to him. It seemed to me that a psychic prolongation of his fingers was in this instance responsible for the phenomenon.

SÉANCE III

Sitters: Mr. X (medium), Miss A, Mrs. B, Mrs. C.

The table was suspended from the ceiling by cords and the electrical contact apparatus used as before. Mr. X sat on the weighing machine. I asked the operators to increase the weight of the table. In the early part of the séance they seemed to experience difficulty in doing this, but towards the end they accomplished it quite easily, the bell not ringing.

There was some difficulty in getting the decreased weight of Mr. X corresponding to the

increased weight of table; in fact there did not seem to be any relation between the two. This much, however, can be said, that Mr. X's weight *always* decreased when the table's weight increased. The following are some readings:

Loss of weight
of Mr. X

4 lb.
7 lb.
7 lb.

Increased weight
of table

8 lb.
12 lb.
11 lb.

The last two are nearly correct as I set the rider at a certain mark on the lever, and placing one hand on the lever and the other on the pointer of the balance, noted exactly the mark attained by the pointer when the lever fell.

Mrs. B then sat on the weighing machine and Mr. X took her place (which was directly opposite). I balanced her weight and then set back the rider along the lever. With a finger of one hand on the pointer of the balance and a finger of the other on the lever, I marked the exact point on the spring balance at which the lever of the weighing machine fell. The following is the reading:

Loss of weight
of Mrs. B

3½ lb.

Increased weight
of table

8 lb.

There was, however, a difference at this séance between the results for Mrs. B and Mr. X. With Mrs. B the pointer on the spring balance often

went almost completely back to normal and yet her weight remained considerably reduced. That is, though the increased weight had been removed from the table, Mrs. B's weight still remained reduced. Furthermore, the amount of reduction of her weight seemed variable.

On one occasion, without asking for it, the pointer on the spring balance went back to zero, i.e., the weight of the table was decreased by an amount about equal to its own weight.

On several occasions when the weight was increased by about 16 lb. the table was trembling violently. On these occasions the pointer of the spring balance was oscillating over a small arc at a great rate.

SÉANCE IV

Sitters: Mr. X (medium), Miss A, Mrs. B, Mrs. C.

Table arrangements as before. Mr. X was sitting on the weighing machine. Further weight tests were made. The following are the results:

Mr. X's weight *always* decreased when the weight of the table *increased*, and it also always diminished when the weight of the table *decreased*; i.e., he experienced a reduction in weight in both cases. Furthermore, sometimes when there was apparently no action on the table at all, his weight was temporarily reduced a few pounds.

On one occasion his weight was reduced 1 lb., and on another $\frac{3}{4}$ lb., when the table's weight was *decreased* 4 or 5 lb. For an *increase* of weight of the table of 3 or 4 lb. Mr. X's weight diminished about $1\frac{1}{2}$ lb. It diminished 4 or 5 lb. when there was an increase of from 8 to 10 lb. in table's weight.

It seems that there is a much less decrease in the medium's weight for a reduction in the table's weight than for a corresponding increase in the table's weight.

Near the end of the séance the bell rang once when nobody was within a foot of the table. Also, when the sitters sat round the table without touching it, the table several times oscillated about, the movement being a psychic non-contact one.

Mrs. B sat with her hands on her knees and the remaining three sitters had their hands on the contact apparatus. This arrangement seemed immediately to increase the magnitude of psychic results on table.

On those occasions when the table was pulled down (its weight increased) and pushed up (its weight decreased) the pull or push seemed to be quite centrally applied to the table, for there was no twisting movement. The resultant of the pull or push must, therefore, be practically in line with the centre of the table.

Several times after the table's weight had been

increased from 8 to 12 lb. and when the pointer on the spring balance had returned to normal (i.e., no pressure on table) Mr. X's weight did not simultaneously come back to normal, but remained several pounds reduced for a considerable time.

SÉANCE V

Sitters: Mr. X (medium), Miss A, Mrs. B, Mrs. C.

All the under-surface and legs of the table were covered with turpentine soot, in order to see if any marks would be left due to a psychic structure gripping the wood of the table. One such mark was found, but it requires verification. The sitting was chiefly remarkable for a message which was laboriously spelled out, the table turning in the air when the correct letter of the alphabet was reached (I called out the letters). The following was the message:

"Clean table, tie hands and feet of sitters to their chairs and sit nine inches back from the table."

SÉANCE VI

Sitters: Mr. X (medium), Miss A, Mrs. B, Mrs. C.

I tied the sitters' legs together at the ankles with strong cord. At first I also tied each sit-

ter's own hands together, but later altered this arrangement and tied each sitter's hands to his neighbour's on either side of him, thinking this procedure would give better results. The circle sat at a distance of a foot or so from the table which was suspended in the usual way. Thus no one was touching the table with any part of his body. Nevertheless the table commenced to twist and tilt and oscillate about. The movements were not very strong but they were genuine psychic movements of the non-contact order. The table moved by jerks, not with soft gliding motions as one might expect, but as though it were gripped somewhere and actually shoved about—the exact type of movements as at the Goligher circle, although on a much smaller scale.

After some time the sitters placed their hands on the contact apparatus when immediately the movements became very powerful. The table's weight decreased 10 lb. and later on 20 lb. without the bell ringing.

The phenomena *without contact* seemed to be much of the same type as those *with contact*, only, as I have said, on a much smaller scale. Hence it seems that the placing of the hands on the table simply makes the production of the phenomena more easy but does not alter its main characteristics.

GENERAL

The chief outstanding points in connection with these tests on "contact" phenomena are the following:

(1) the increases and decreases of weight of the table are not due to the muscular action of the medium or sitters.

(2) the medium or mediums (there may be more than one in this sort of circle) lose weight while the table is being psychically acted upon.

(3) the medium's loss of weight does not endure only during the time the table is being acted upon, but may last for some time after psychic action has ceased.

(4) there is strong evidence of a psychic arm or link connecting the legs of the medium with the legs of the table. The characteristics of this arm appear similar to that of the arm which levitates the table in "non-contact" phenomena of the Goligher type.

(5) since in this case the "contact" phenomena changed into weak phenomena of the "non-contact" type, it is reasonable to suppose that the two types have features in common.

(6) for heavy movements of the whole table the psychic arm would appear to issue from the lower part of the legs of the medium; but psychic prolongations can also issue from the fingers, as witness the case in which the electric

bell rang when the medium held his fingers several inches above the contact apparatus. As a matter of fact I find that these psychic structures almost invariably issue from the extremities of the medium's body either in the vicinity of hands or feet. It was so with Miss Goligher and would appear to be the same with Mr. X.

CHAPTER VII

DIRECT VOICE PHENOMENA

I AM now going to describe some experiments I carried out on "direct voice" phenomena, which phenomena occurred during several séances held in my own house. As the reader is no doubt aware, the "direct voice" is a rather rare form of psychic phenomenon. Voices, not apparently the voice of the medium or of any of the sitters, speak from the air within or around the circle. They speak through thin metal cones or "trumpets" which seemingly float about in the air under psychic support, their function being to concentrate the voice sounds and thus make them more audible than they otherwise would be. I refer the reader who desires to obtain a good general idea of this type of mediumship to the late Vice-Admiral Moore's book, "The Voices."

The medium who was responsible for the voice phenomena occurring at the séances held in my house was Mrs. Z, a well-known public psychic. There has been much controversy over this woman's mediumship. Her séances, in or-

der to produce any result worth mentioning, have to be held in absolute darkness, which, however, I believe, is generally true of all sittings for the "direct voice" with all mediums. Hence there is considerable scope for fraud if the medium be a fraudulent one.

Mrs. Z has been going up and down the country for a number of years, giving hundreds of séances. I do not think anything definite has ever been discovered during this period of time which points conclusively to fraud. I have heard the explanations of many people who claim to describe how her phenomena are produced fraudulently, but when these explanations are critically examined they are found to be of little value.

The reader, however, must understand that the experiments I carried out with this medium were done under the following limitations:

- (1) They were nearly all carried out in complete darkness.
- (2) The medium was a public one.

I carried out the tests for my own satisfaction and did not think of publishing them; but on consideration, I have come to the conclusion that they should be put on record, if for no other reason than that the results may be compared hereafter with the vast quantities of experimental work that will have to be done if we are ever to get at the bottom of this psychic question.

It must be distinctly understood by the reader that I do not guarantee the genuineness of the results given below. I did everything I could to prevent fraud; but in an absolutely dark séance room it is obviously impossible to ensure complete prevention. The reader must draw his own conclusions, or wait till the results obtained are compared with similar results from other "direct voice" mediums.

The sittings were held in my own house in a small laboratory I have fitted up for psychic work. The sitters were all my personal friends specially invited to the séances by myself.

Fig. 29 shows (in connection with other apparatus) a photograph of the two trumpets used. Each of them was made in two sections of thin tinned iron, which fitted tightly together telescopically. The particulars are as follows:

No. 1, weight.....	1 lb. 2 oz.
No. 2, weight.....	1 lb.
Length of each.....	34 inches
Apertures.....	$\frac{1}{4}$ inch and 4 inch diameter

SÉANCE I

Date—Saturday, 20th April, 1918.
Time 8.00–9.30 p. m.

Weights of medium and sitters just before and just after the séance:

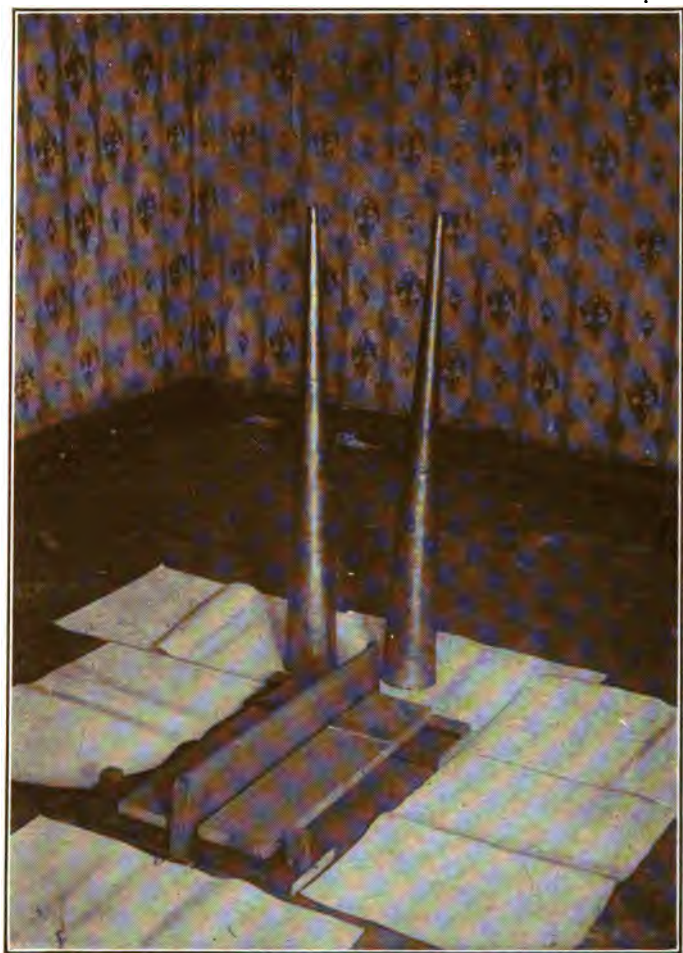


FIG. 29.

	Weights just before séance—pounds	Weights just after séance—pounds
Mrs. Z (medium).....	279 $\frac{3}{4}$	279 $\frac{1}{2}$
Mrs. A.....	139 $\frac{1}{2}$	139 $\frac{1}{2}$
Mr. X.....	160 $\frac{1}{4}$	158 $\frac{1}{4}$
Mr. R.....	189	188 $\frac{1}{2}$
Mrs. Q.....	143 $\frac{1}{2}$	143
Mr. M.....	177 $\frac{1}{2}$	177 $\frac{1}{2}$
Mrs. B.....	160	159 $\frac{1}{4}$

The above weights include weight of chair and drawing-board (13 $\frac{3}{8}$ lb.).

It will be noted that there was an almost general reduction in weight after the séance, but that the medium lost only a quarter of a pound.

The reader will be interested to hear that at a circle held about a year previously with Mrs. Z, one of the voices, just before the breakup of the séance, gratuitously informed us that if we were to weigh the medium at the conclusion, we would find that she had lost 10 or more pounds due to the phenomena occurring during the evening. There is no doubt that the medium believed this herself; at any rate she mentioned it several times in the course of conversation. But it is all rubbish. The medium loses permanently very little weight; less, indeed, than some of the sitters. And in this respect she is in line with all other mediums I have known.

I think the origin of the medium's belief that she lost 10 or more pounds in weight during one of her circles came about as follows: Some years ago in America telekinetic phenomena occurred through her; as a matter of fact a piano is said

to have moved across the room. She was weighed while this was happening and it was found that she lost a good many pounds. The medium immediately came to the rash conclusion that this loss of weight was permanent and she has since so informed all and sundry. Of course, the loss (supposing it to have taken place) was merely temporary and lasted only during the time the phenomenon was occurring. The reader who has followed my experiments will know that these temporary fluctuations of weight seemingly occur during all phenomena of the telekinetic order.

But what are we to think of the voice (quite evidently a "direct" voice and not the voice of the medium either in or out of trance) which definitely declared that the medium permanently lost a great many pounds in weight? Did the voice belong to a sub-conscious part of Mrs. Z's *ego* masquerading as an independent entity, or did it really belong to an independent spirit? If the latter was the case, why did the spirit make incorrect statements in so fundamental a matter? If an independent spirit was speaking he must be very like unscientific people here who, in order to impress others, are not very careful or exact in their statements.

Returning to my experiments, the two trumpets were placed upright on the floor within the circle. The red light (obtained from a gas jet

enclosed in a large lantern having a sliding red glass front) was turned on full and the lantern was placed on a table at the end of the room farthest from the medium. Nothing happened for about a quarter of an hour. Then there were some raps on the floor and on the trumpets. In reply to questions the operators said (by raps) that the light was too strong. I went over to the lantern and turned the gas half down. A feeble voice, apparently emanating from near the ceiling within the circle space, was then heard saying, "Sing something." Soon the swish of what might have been the trumpets flying about in the air was heard (they could not, however, be seen). The voice then said, "Turn the light round," i.e., the light was to be turned round so that it faced the wall, away from the circle and the medium. This voice is from the control, who is supposed to be a daughter of the medium who died many years ago and who now acts as chief guide or control at her mother's circles. Her voice is very much in evidence at all Mrs. Z's circles and it has a peculiar *timbre* not easily mistakable. The light was turned round as directed, which had the effect of making the room practically dark. There were then heard some facetious remarks from the control with regard to the experimental apparatus in the room and various voices spoke which gave names but no evidence of identity.

What I wished, however, was to see if the trumpets were really moving about in the air, as they seemed to be doing from the various directions in which the voices were speaking and from the peculiar way in which the trumpets apparently touched sitters in different parts of the circle. But it was now evident that only the feeblest light was possible with this medium. So I inserted a yellow screen in front of the red glass of the lantern which I again turned round facing the medium. (It is to be remembered that the lantern was on a table right outside the circle of sitters and perhaps seven feet distant from the medium.) The screen had the effect of practically extinguishing the light, there only remaining the dulllest glow visible just in front of the lantern. Mr. M, who was holding the left hand of the medium, then said that he could see the trumpets moving in front of the lamp. I went over beside him and saw shadows crossing and re-crossing the dull glow produced by the light. These shadows seemed to be due to the trumpets, for their outlines were visible crossing both in a vertical position (sometimes small end up and sometimes large end) and in an inclined position.

At the conclusion of the séance when the lights were turned up, a fresh mark was found on the plaster of the ceiling of the room which would appear to have been made by the end of a trum-

pet. This mark was more than ten feet distant from the chair on which the medium was sitting. After the medium had departed we tried if it was possible to make such a mark fraudulently, even with the aid of both trumpets, but nobody could see how this was possible. (The small ends of the trumpets were of practically the same diameter and would not telescope into each other.) I may say also that I had heard voices speaking from the vicinity in which the mark was discovered.

During the *whole* séance Mr. M had hold of the medium's left hand. Mrs. A had her right hand, but this was occasionally free for a few seconds.

This séance showed that practically no phenomena could be obtained with this medium even in the feeblest of light. The trumpets could not even be made to move in the air round the room except in the dullest of dull glows. With Miss Goligher's mediumship the trumpets floated about in strong red light, and could be examined in detail (see R.P.P.).

SEANCE II

Date—Sunday, 21st April, 1918.
Time 7.30–9.15 p. m.

Weights of medium and sitters just before and just after the séance:

	Weights just before séance—pounds	Weights just after séance—pounds
Mrs. Z (medium).....	282½	282½
Mr. R.....	188½	188½
Mr. M.....	176½	176
Mrs. S.....	146	144½
Mrs. T.....	136½	136½
Mrs. A.....	141½	141
Mrs. Q.....	145½	145

The above weights include weight of chair and drawing-board (151½ lb.). (The chair used at these séances was not always the same.)

Experiment to find the effect on the medium's weight while a voice was speaking.

The medium sat on a chair which rested upon a drawing-board placed on the platform of a weighing machine. The medium is a heavy woman and she found it difficult to make herself comfortable on the machine, yet she sat upon it for nearly an hour. I exactly balanced her weight so that the lever of the machine was just quivering between the stops. The machine just balanced at 282½ lb. The two trumpets were placed upright on the floor within the circle. The medium sat with her hands on her knees. The lights were turned completely out and the séance commenced. I stood at the back of the machine with my right hand upon the lever, so that I was sensible of its slightest movement. With my left hand I felt the back of the medium from time to time.

Nothing happened for a quarter of an hour or

so. Then the lever of the machine fell lightly on the bottom stop, indicating that the medium's weight was decreasing. Very carefully I moved the rider back along the lever and obtained a new balance. Although it was dark this was quite easily accomplished by my sense of touch. The medium's original weight had balanced at $282\frac{1}{2}$ lb., so that the rider had been at the $2\frac{1}{2}$ lb. mark beyond zero on the scale. I found that by moving the rider almost exactly to zero that the lever just balanced again. The decrease in the medium's weight was, therefore, within an ounce of $2\frac{1}{2}$ lb. Immediately after I had surely obtained the new balance, the control's voice, issuing apparently from somewhere near the roof within the circle, cried out, "Weigh me," and a trumpet dropped with a crash to the floor within the circle. The medium's weight then immediately returned to the original value.

About a quarter of an hour later the same thing happened. The medium's weight suddenly decreased almost exactly $2\frac{1}{2}$ lb., the control's voice called out from near the ceiling, "Weigh me," a trumpet dropped with a crash to the floor, and the medium's weight immediately returned to normal.

The whole experiment was carried out in absolute darkness, only the senses of touch and hearing being of any use to the experimenter. What then are the chances that the decrease in the

medium's weight was due to genuine psychic action and not to fraud?

- (a) With the exception of the occasion when her weight decreased as described, there was absolutely no action on the weighing machine. The lever was very delicately balanced and I could note, by my sense of touch, if it moved the smallest amount. I am perfectly satisfied in my own mind that the medium, far from moving off the machine or touching or pushing on or lifting extraneous bodies, hardly moved a muscle all the time she was sitting on the machine (possible exceptions, of course, being during the two periods of decreased weight). If she had done any of these things the delicately poised lever would have given it away. Moreover, the medium is a large heavy woman and any movements she would make, especially from the small platform of a weighing machine seven inches above the floor, would most likely be of a clumsy nature. Therefore, any fraud attempted was only during the periods of decreased weight.
- (b) If the medium lifted a trumpet with a hand or foot and held it out in the air, the weighing machine would register increase of weight equal to weight of trumpet. The

"

medium's weight, however, decreased on both occasions.

- (c) If the medium put out a hand, grasped the end of a trumpet and pressed the other end of the trumpet on the floor, her weight would decrease. In order, however, to make the decrease almost exactly $2\frac{1}{2}$ lb. on two separate occasions, she would need to have a very nice sense of touch.
- (d) If acting fraudulently the medium, during the period of the fraud, must have been doing something with the trumpet, for it crashed on the floor as soon as the voice spoke, and then immediately she regained her lost weight. It is certain she did not lift the trumpet clear of the floor at any time, for at no period was there the slightest increase in her weight. Yet the voice spoke from near the ceiling. If the trumpet had been pressed on the ceiling by the medium she would have gained weight, and during the time she was lifting it from floor to the ceiling she would have also gained weight.

Taking it on the whole I am inclined to think the phenomenon was genuine and that the decrease in weight of $2\frac{1}{2}$ lb. was due to psychic action.

As practically no phenomena were forthcoming while the medium was sitting on the weigh-

ing machine (with the exception of those noted) I finally removed the machine and the medium sat on a chair placed on the floor. The medium said that the iron of the machine was hindering the production of phenomena. Voices in fair number then spoke, but nothing in the way of tests of identity was given.

I asked the control if during the experiment I had been weighing her or the trumpet. She did not seem to know. for she told me to "find out" for myself.

SÉANCE III

Date—Saturday, 27th April, 1918.
Time 8.00–9.30 p. m.

Weights of medium and sitters just before and just after the séance:

	Weights just before séance—pounds	Weights just after séance—pounds
Mrs. Z (medium).....	286	285½
Mrs. A.....	143	142½
Mr. M.....	182¾	182½
Mr. U.....	153½	153½
Mr. W.....	158½	158½
Mrs. S.....	146¾	146½
Mrs. T.....	138½	138½

The above weights include the weight of chair and drawing-board (18¾ lb.).

Experiment to determine if the "direct voice" could be registered on a phonograph.

In order that the medium might not be able to move the trumpets with her feet, I devised an

electrical apparatus which effectually prevented this. A photograph of it is shown (fig. 29). It consists of a couple of flat boards hinged at their back ends to an under board which is screwed to the floor. An electrical contact device and springs are so arranged to each that normally the contacts are closed and an electric bell in the circuit rings. If a person sits on a chair and places a foot on each of the flat hinged boards the contacts are opened, due to the weight, and the bell ceases to ring. Each foot-rest operates independently. Between the two foot-rests is a vertical board sufficiently high to prevent one foot from being placed across both rests simultaneously. Many control tests showed that neither foot could be raised for an instant without the bell ringing.

When Mrs. Z came into the séance room and saw the foot electrical apparatus she seemed annoyed and nervous (I had not previously told her of it). She said I should have made arrangements with her guides, i.e., spirit controls, before it was used. It took a lot of coaxing before she would consent to sit on a chair above the apparatus and put her feet on it.

A friend of mine, Mr. Stoupe, sat on her left and Mrs. Mills on her right throughout the whole séance. The medium placed a hand on each knee. A minute or two after the light was put out each of these sitters linked the little finger

of each of the medium's hands with their own hands, and I have their word that except during the times the light was subsequently lit (it was lit twice) they held tightly and that the medium's hands were never free. On the occasions upon which the light was temporarily lit I examined the situation and found each of the medium's hands properly gripped; in fact they were gripped so tightly that it was necessary, during the few minutes the light was on, to relax hands temporarily in order to give relief to the fingers of medium and sitters which had become cramped. But before the light was again extinguished the medium's hands were again tightly held.

As I have said, Mrs. Z, although obviously nervous and ill at ease, eventually submitted to all the test conditions. The trumpets were placed upright on the floor within the circle and the light was extinguished.

Within four minutes from the commencement the control's voice was heard from the air within the circle. I was surprised at this quick starting of phenomena, as at the previous séances they had been much slower in getting under way. Is it possible that the control, being a real spirit entity, desired to give her mother confidence and to show her that there was no reason for her nervousness? At any rate this was the effect

produced, for the medium immediately became quite cheerful.

The phonograph was resting on a table *outside* the circle of sitters, directly opposite the medium. The horn of the instrument was more than seven feet distant from her.

The control seemed to be in charge, so I explained that I wished her to bring the mouth of the trumpet through which the direct voice would speak, right up to the horn of the phonograph, as otherwise the voice might not be clearly reproduced. She rather discourteously replied that "she would do what she liked."

However, in a short time, she said she was ready. I told her to wait until she heard the buzzing of the machine and then to speak into it. Before I pulled the lever which started the machine (it was an Edison "Standard" kindly loaned me by Mr. Edens Osborne of Belfast), I asked the sitters on either side of the medium if they had tight hold of her hands and they replied in the affirmative. The cylinder had only made a few revolutions when the control commenced to sing a song into the horn. This song was three verses in length and at the end of each verse she interjected remarks such as "How's that," etc. I told her to sing a little louder, and during the third verse she sang quite loudly.

I plainly felt the movement of the air just at the mouth of the phonograph horn as the song

was being sung, which would seem to indicate that the end of the trumpet was moving to and fro at that spot. Moreover, the control's voice emanated from a position just at the mouth of the horn. I did not attempt to touch the trumpet as I knew from experience that if I did so it would be likely to drop. If an end of the trumpet was thus right at the mouth of the phonograph horn, as it appeared to be, the nearest distance of the other end of the trumpet from the medium must have been well over four feet. At the conclusion of the song and after I had stopped the instrument I asked the sitters on either side of the medium if they still had hold of her hands and they replied in the affirmative. These sitters afterwards told me that during the taking of the record the medium's hands were vibrating rapidly as though they were under great nervous stress.

Then occurred the incident of the silk coat (discussed later).

The control asked that the light be turned on, which was done. I tried the record and found the voice satisfactorily recorded.

Another blank record was put on the machine, the medium's hands were held and the light was put out. The control, at my request, this time spoke into the horn of the phonograph, instead of singing, and again the voice was recorded.

There is internal evidence in the records them-

selves, that the voice must have been speaking right into the horn of the phonograph and not from some distance away. Amongst people who are continually making records it is well known that if the voice to be recorded speaks too close into the horn a kind of tinny, metallic sound is produced which spoils the quality of the reproduced voice. Phonograph manufacturers call this effect "blasting." In several places in the two records of the control's voice this metallic "blasting" is heard, indicating that the voice must have been very close to, if not indeed within, the horn of the phonograph.

At the conclusion of the experiment the electrical foot apparatus was tested and was found to be working perfectly.

THE COAT INCIDENT

At the commencement of the séance the medium wore a knitted silk coat having sleeves reaching down to the wrist. There was a silk belt fastened round it at the waist.

Just after the first phonographic record had been taken I heard a peculiar fussling noise near me (on the side of the circle remote from the medium). When the light was turned on, the coat and belt were found neatly hung over the arm of one of the men (Mr. W) sitting opposite the medium and perhaps five feet distant from

her. They had previously landed on Mrs. T's hands and had then seemed to take a leap on to the gentleman's arm (so at least says Mrs. T). One sleeve of the coat was found turned outside in. The belt was found undone and separate from the coat. At the time the coat was thrown or lifted on to Mr. W's arm, both Mrs. Mills and Mr. Stoupe were holding one of the medium's hands and her feet were on the electrical apparatus. But there was a minute or two at the beginning of the séance, while the hands of everybody were supposed to be resting on knees, during which the medium's hands were free. Hence there is nothing to test conditions about this incident and I only relate it as a matter of interest.

SÉANCE IV

Date—Sunday, 28th April, 1918
Time 7.30–9.00 p. m.

Weights of sitters just before and just after the séance :

	Weights just before séance—pounds	Weights just after séance—pounds
Mrs. Z (medium).....	141½	141½
Mrs. A.....	180	179¾
Mr. M.....	159	159
Mr. W.....	153⅞	153½
Mrs. U.....	148¾	148¾
Mrs. Q.....	144¾	144¾

The above weights include the weight of chair and drawing-board (18¾ lb.).

There was very little phenomena at this séance and the reader should note that the decreases in weight of the sitters are not so marked as in previous sittings.

Experiment with a photographic plate.

The medium held a dark slide containing a half plate in her hands for about half-an-hour. There were noises as though the slide was being opened and closed, and the medium may have been doing this. The control's voice was heard saying that she was trying to put something on the plate.

Result: Negative. Nothing whatever on the plate.

Experiment with curtain rings.

Two wooden curtain rings were placed on the floor with a request to the operators to interlock them. (This would have amounted to the penetration of solid matter by solid matter.)

Result: Negative.

Experiment with clay in sealed box.

A wooden box about 12 inches square and 4 inches high was used. Into this some modeller's clay was placed and nicely smoothed. The lid was then placed on it and the whole roped and sealed. The operators were asked to make an impression on the clay inside the box without breaking the seals.

Result: Negative.

THE MUNICIPAL TECHNICAL INSTITUTE,
Belfast, 6th May, 1918.

I hereby declare that during the whole time the control was singing and speaking into the phonograph, I had firm hold of Mrs. Z's left hand. Her hand was resting on her knee and my little finger was tightly twisted round her little finger. Dr. Crawford asked me just *before* each phonograph record was taken and just *after* it was taken if I was sure I had tight hold. I replied that I was sure.

(Signed) SEAMUS STOUPE.

BRAY, Co. Wicklow, 7th May, 1918.

I hereby declare that during the whole time the control was singing and speaking into the phonograph, I had firm hold of Mrs. Z's right hand. Her hand was resting on her knee and my little finger was tightly twisted round her little finger. Dr. Crawford asked me just *before* each phonograph record was taken and just *after* it was taken if I was sure I had tight hold. I replied that I was sure.

(Signed) MARIAN MILLS.

LIST OF EXPERIMENTS

Experi- ment No.	Subject	Page
1.	Capsizing moment on medium.....	28
2.	Capsizing moment on medium.....	33
3.	Effect of base of cantilever column resting on pressure recorder.....	36
4.	Impression on clay of base of cantilever column.....	39
5.	Effect on medium's weight when ex- perimenter presses downwards on levitated table.....	40
6.	Effect on medium's weight when the base of the cantilever rests on the scalepan of a spring balance under levitated table.....	41
7.	Effect on medium's weight when the base of the cantilever rests on the scalepan of a spring balance under the levitated table.....	44
8.	Effect on medium's weight when the base of the cantilever rests on the scalepan of a spring balance under the levitated table.....	45
9.	The table levitated upside down.....	51
10.	Effect on weight of medium when table's weight is psychically increased.....	52
11.	Effect on weight of medium when table's weight is psychically increased.....	53
12.	Effect on weight of medium when table's weight is psychically increased.....	54
13.	Effect of the phenomena on the me- dium when she is seated on bicycles	56
14.	Effect on weight of medium when the experimenter presses on the table in the direction of medium.....	61
15.	Effect on weight of medium when the experimenter pulls outwards on the table away from medium.....	62

Experi- ment No.	Subject	Page
16.	How the psychic rod acts when a man, though exerting all his strength, is unable to push the table, resting on the floor, inwards towards medium	63
17.	Downward psychic pressure on scale-pan of balance.....	69
18.	Movement of medium and chair along the floor.....	71
19.	Weight of matter used in the construction of psychic cantilever.....	78
20.	Psychic matter placed on drawing-board.....	79
21.	Psychic matter used for largest rapping rod.....	80
22.	Psychic matter built up into a rapping rod.....	81
23.	Maximum weight of matter taken from medium's body.....	81
24.	Reaction pressure on medium's chair, drawing-board, standard of weighing machine, etc.....	83
25.	To see if the operators could increase the weight of medium by direct action upon her body.....	84
26.	To see if the free end of the cantilever structure is a conductor of low-tension electricity.....	86
27.	To see if the free end of the cantilever structure is a conductor of low-tension electricity.....	87
28.	To see if the free end of the cantilever structure is a conductor of low-tension electricity.....	88
29.	The effect of medium touching the levitated table with her hand.....	90
30.	The effect of medium touching the levitated table with her hand and with various substances.....	91
31.	The effect of medium touching the levitated table with her hand and with various substances.....	92
32.	Medium sitting with her back to the circle.....	94
33.	Medium sitting sideways to the circle	95
34.	Effect on phenomena of medium and sitters standing.....	95

Experi- ment No.	Subject	Page
35.	Effect of grasping ankle of medium...	96
36.	Temperature of table during a long levitation.....	96
37.	Temperature of cantilever and psychic matter.....	97
38.	Wire netting in front of medium.....	99
39.	Potato sack in front of medium.....	99
40.	To see if the operators could write a message with a pencil.....	103
41.	Weight of psychic body of medium...	103
	"Contact" phenomena.....	160
	Experiments on the "direct voice"...	178





3 2044 009 561 176

THE BORROWER WILL BE CHARGED
AN OVERDUE FEE IF THIS BOOK IS
NOT RETURNED TO THE LIBRARY ON
OR BEFORE THE LAST DATE STAMPED
BELOW. NON-RECEIPT OF OVERDUE
NOTICES DOES NOT EXEMPT THE
BORROWER FROM OVERDUE FEES.

